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A Summary of Current Programs, 10/1/64
and Preliminary Report of Progress
for 10/1/63 to 9/30/64

ECONOMIC AND STATISTICAL ANALYSIS DIVISION
of the
ECONOMIC RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE
and related work of the
STATE AGRICULTURAL EXPERIMENT STATIONS

This progress report is primarily a tool for use of scientists and administrators in program coordination, development and evaluation; and for use of advisory committees in program review and development of recommendations for future research programs.

The summaries of progress on USDA and cooperative research include some tentative results that have not been tested sufficiently to justify general release. Such findings, when adequately confirmed, will be released promptly through established channels. Because of this, the report is not intended for publication and should not be referred to in literature citations. Copies are distributed only to members of Department staff, advisory committee members, and others having a special interest in the development of public agricultural research programs.

This report also includes a list of publications reporting results of USDA and cooperative research issued between October 1, 1963, and September 30, 1964. Current economic and statistical research findings are also published in the Outlook and Situation Reports, Agricultural Economics Research, and The Farm Index. This progress report was compiled in the Economic and Statistical Analysis Division, Economic Research Service, U. S. Department of Agriculture, Washington, D. C.

UNITED STATES DEPARTMENT OF AGRICULTURE
Washington, D. C.
October 1, 1964

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INTRODUCTION

The Economic and Statistical Analysis Division has the responsibility for research directed toward (1) the identification and measurement of relationships among the factors affecting the demand, supply, and price of agricultural commodities; (2) identification and measurement of broad relationships between the farm economy and the national economy; (3) measurement and analysis of farm income and income of farm population; (4) measurement and analysis of demand for and consumption of food and other farm products; (5) long-run projections of economic growth and the demand for farm products; (6) measurement and analyses relating to adoption of farm practices, goals, values and decision making, and other rural problems and trends; and (7) historical research relating to major developments in farming and major changes in policies, programs, and organizations of the Department.

Development and improvement of statistical data and development, adaptation, and application of new and improved methods and techniques of statistical analysis are integral parts of this process.

This research provides the information that underlies the appraisals of the current and prospective economic situation for agriculture and for agricultural commodities which are the heart of the outlook work. It also provides the information required for analyses of the probable effects of alternative programs and the measurement of the effects of actual programs.

Economic and statistical analysis research is reported for the period October 1, 1963 through September 30, 1964. The research effort in the Economic and Statistical Analysis Division amounts to approximately 75 professional man-years.

Following are some of the recent research accomplishments of the Economic and Statistical Analysis Division.

Because of growing beef imports in 1963 and price pressures in the domestic cattle market, a special analysis was made to measure the relative importance of domestic fed beef production, cow beef production, beef imports, supplies of competing meats, and other factors on fed cattle and cow prices. The analysis indicated that a one-pound per capita change in fed beef production resulted in a change in the opposite direction of 50 cents in the Choice steer price at Chicago; a one-pound change in the aggregate of cow beef production and beef imports changed the Choice steer price by about 30 cents in the opposite direction; and most of the variation in fed cattle prices in the past two years was explained by variation in domestic steer and heifer beef production. Results from the study are useful in putting imports in proper perspective, in making price forecasts, and in appraising the effect of the government beef purchase program on cattle prices.

A computer program was developed to convert Census import statistics for varied textile products to a common reporting unit, and to summarize such data by specified categories. The program, first designed for the IBM 650, was redeveloped and expanded for the IBM 7074. Expansion was necessary because of a revision in the Census coding classification of import statistics which more than tripled the number of items handled. An IBM library program for multiple regression was further modified to reduce excessive manual interference inherent in the original processing procedure. Based on certain control specifications, the program now moves between operational phases and among problems automatically, making for a smoother, more rapid operation. Another program, "Forecasting by Econometric Systems," written by IBM personnel for the IBM 7090, is being reviewed for its application to Division projects. The program permits solution of equations via least squares, two-stage least squares, and the limited information methods.

A new series on disposable personal income of the farm population from 1934 to date was developed and published in the Farm Income Situation, July 1964. Disposable personal income is the personal income of the farm population from all sources less personal tax and non-tax payments. It is a measure of the income available to farm people for family living expenditures or for savings and investments. In 1963 the per capita personal income of the farm population was \$1,376, or 63 percent of the per capita disposable income of the nonfarm population. The new series will be brought to date and published each year as a continuing series on farm income.

Some results of further historical work on the problem of measuring what may be called technological revolutions in American agriculture were published in an article, "Economic Growth and the Theory of Agricultural Revolution." This work indicates that two periods from about 1850 to 1870 and from 1940 continuing to 1964 and beyond are quite distinct from other periods of change, being marked by unusually high rates of technological development in American farming. Historical and economic analyses of these periods help explain the process of economic growth, and the importance of agriculture in that process.

In the area of farm population and rural life, a number of cooperative studies with State Agricultural Experiment Stations was completed. Bulletins were published relating to migration of rural people in Colorado; education, migration, and occupational adjustment of rural youth in Kentucky; impact of industrialization on a rural community in Iowa; rural health practices in Connecticut; and the influence of drouth conditions on population and farming changes in Texas. In press are bulletins on educational and career plans of rural youth in Florida, adjustments of rural migrants to urban conditions in Iowa and Delaware, and the retirement plans of older rural people in South Dakota.

Pounds of food and calories consumed per person have changed little in postwar years, though there have been material changes in the diet toward more meat, less animal and more vegetable fat, more processed fruits and vegetables, and reduced consumption of cereals. Total demand for farm products is highly inelastic in response to changes in prices, incomes, and consumer preferences. Appraisals of the supply response in agriculture lead to the overriding conclusion that new technology alone pushes up the supply at a rate about as rapidly as markets for farm products are expanded by population growth and other demand factors. Projected demand and the output potential of agriculture point to a continued downward pressure on farm product prices and income. But this shrinking agricultural share of the national income is being divided among fewer farms. The trend toward an increasingly commercial agriculture of relatively large efficient units implies extensive asset transfers, adjustments in resource use, and possibly changes in traditional extension and research activities.

AREA NO. 1. COMMODITY SITUATION AND OUTLOOK ANALYSIS

PROBLEM

Because of the instability of the prices he receives and rapidly changing conditions of agricultural production, the farmer stands in special need of frequent accurate appraisals of his economic prospects if he is to plan and carry out his production and marketing activities in an efficient and profitable way. The typical farmer cannot afford to collect and analyze all the statistical and economic information necessary for making sound production and marketing decisions. It is a goal of the Department to provide the farmer with economic facts and interpretations comparable to those available to business and industry. This is accomplished through a continuous flow of current outlook information, the development of longer range projections of the economic prospects for agricultural commodities, and analyses of the economic implications of existing and proposed programs affecting farm commodities.

USDA AND COOPERATIVE PROGRAM

The program includes the regular publication of 12 commodity outlook reports; holding of the Annual Outlook Conference in Washington in mid-November; participation of commodity specialists at regional and State outlook meetings and at meetings of farm organizations and agricultural industry groups; preparation and publication of special articles bearing on both the short-run and long-run outlook for farm commodities; issuance of comprehensive statistical bulletins containing the principal economic series pertaining to the various commodities; long-range projections of supply of and demand for the major agricultural commodities; and continuing analysis of the impact of existing and proposed alternative farm programs as they affect output, utilization, and prices of these commodities.

Except for a Regional Field Office for Livestock, in Denver, Colorado, all the USDA situation and outlook work is carried on in Washington. The regional livestock project is a cooperative effort including the Economic and Statistical Analysis Division, the Federal Extension Service, and State Extension Services in the Western and certain Great Plains States.

The total USDA commodity situation and outlook program currently involves 21.5 professional man-years.

(a) Livestock and Meat. This work involves 2.5 professional man-years in Washington and 2.0 professional man-years in Denver, Colorado. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation of livestock and meats. These appraisals, developments of interest to the industry, and results of special studies

are published 6 times a year in regular issues of the Livestock and Meat Situation, in special additional issues as warranted, quarterly in the Demand and Price Situation and the National Food Situation, and monthly in the Western Livestock Round-Up, which is supplemented by special releases and materials circulated to Extension Marketing Specialists in the cooperating Western and Great Plains States. A comprehensive analysis of the livestock situation is presented at the Annual Outlook Conference. Outlook appraisals are presented at regional and State outlook meetings, at meetings of farm organizations, and to various agricultural industry groups. Special analyses are prepared on the probable effect of proposed feed grain programs on the price, supply and consumption of livestock and livestock products. Basic statistical series are maintained, improved and published for general use in statistical and economic analysis. A Statistical Handbook, Livestock and Meat Statistics is published annually.

(b) Fats and Oils. This work involves 2.0 professional man-years in Washington. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation of fats, oils, and oilseeds. These appraisals, developments of interest to the industry, and results of special studies are published 5 times a year in the Fats and Oils Situation, quarterly in the Demand and Price Situation and the National Food Situation, and occasionally in monthly issues of the Farm Index and the Agricultural Situation. A comprehensive analysis of the fats and oils situation is presented at the Annual Outlook Conference, and more limited appraisals are given at meetings with industry groups. Special analyses are prepared on the probable effect of proposed programs on the acreage, price, supply, and demand for oilseed crops and for fats and oils and their products. Basic statistical series are developed, maintained, improved and published for general use in statistical and economic analysis. A Statistical Handbook, Oilseeds, Fats and Oils, and Their Products, 1909-63, is being revised and updated for publication in the fall of 1965.

(c) Dairy. This work involves 2.0 professional man-years in Washington. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation of milk and milk products. Appraisals are published 5 times a year in the Dairy Situation, and quarterly in the Demand and Price Situation and the National Food Situation. A comprehensive analysis of the dairy situation is presented at the Annual Outlook Conference. Outlook appraisals are frequently presented at regional or State outlook meetings, at meetings of farm organizations, and to various agricultural industry groups. Special analyses are made on the probable effect of proposed programs on the production-utilization balance of milk and milk products. Basic statistical series are maintained, improved, and published for general uses in statistical and economic analysis. A supplement to Dairy Statistics is being prepared for release in 1965.

(d) Poultry. This work involves 1.5 professional man-years in Washington. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation of poultry and eggs. Appraisals

are published 5 times a year in the Poultry and Egg Situation, and quarterly in the Demand and Price Situation and the National Food Situation. A comprehensive analysis of the poultry and egg situation is presented at the Annual Outlook Conference. Appraisals also are presented at regional or State outlook meetings, at meetings of farm organizations and to various agricultural industry groups. Special analyses are prepared on the probable effect of proposed programs on the price, supply and consumption of poultry and poultry products. Basic statistical series are developed, maintained, improved and published for general use in statistical and economic analysis.

(e) Food Grains. This work involves 2.0 professional man-years in Washington. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation of wheat, rye, rice, and their products. The appraisals, developments of interest to the industry, and results of special studies are published 4 times a year in the Wheat Situation, annually in the Rice Situation, and quarterly in the Demand and Price Situation and the National Food Situation. Outlook appraisals are presented at the Annual Outlook Conference, State or regional conferences, meetings of farm organizations, and to agricultural industry groups. Special analyses are prepared on the probable effect of proposed programs on the price, supply and utilization of food grains. Basic statistical series are maintained and improved and major series are published annually in Grain and Feed Statistics.

(f) Feed. This work involves 2.0 professional man-years in Washington. The outlook and situation program for feed provides a continuing appraisal of the current and prospective economic situation of feed grains, byproduct feeds and forages. These appraisals, developments of interest to the industry, and results of special studies are published 5 times a year in the Feed Situation, and quarterly in the Demand and Price Situation. A comprehensive analysis of the feed situation is presented at the Annual Outlook Conference. Outlook appraisals also are presented at regional outlook meetings and at meetings of farm organizations and various agricultural industry groups. Special analyses are prepared of the probable effect of current and proposed alternative feed grain programs on supply, prices, utilization and carryover of feed grains. Special attention is being given to the effect of such programs on the feed grain production-utilization balance. Basic statistical series covering feed grains, high-protein and other byproduct feeds, commercially prepared livestock feeds, and forages are maintained, improved, and published for use in statistical and economic analysis. A Statistical Handbook, Grain and Feed Statistics, is published annually. Also, an appraisal of the food use of feed grains is published quarterly in the National Food Situation.

(g) Fruits and Tree Nuts. This work involves 1.0 professional man-year in Washington. The outlook and situation program provides continuous appraisal of the current and prospective economic situation of citrus fruits, deciduous fruits, and tree nuts. Regular appraisals are supplemented by special analysis when needed. Results of these appraisals, findings of special analyses, and long-time series of basic data are published in the Fruit

Situation, issued 4 times a year, and in brief reviews in quarterly issues of the National Food Situation and the Demand and Price Situation. A comprehensive analysis of the fruit and tree nut situation is presented at the Annual Outlook Conference. Presentations also are made at regional or State outlook meetings, meetings of farm organizations, and to various agricultural industry groups. Special studies are made to determine probable effect of proposed programs on supply, price and consumption of fruits and tree nuts. Basic statistical series on stocks, foreign trade, consumption, and price are compiled, improved and maintained for general use in statistical and economic analysis.

(h) Vegetables and Potatoes. This work involves 2.0 professional man-years in Washington. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation of fresh and processed vegetables, potatoes, and sweet potatoes, and dry edible beans and peas. Results of these appraisals, and findings of special studies are published in quarterly issues of the Vegetable Situation, the National Food Situation, the Demand and Price Situation, and monthly in the Farm Index. A comprehensive analysis of the vegetable and potato situation is presented at the Annual Outlook Conference. Appraisals also are presented at regional or State outlook meetings, and at meetings of farm organizations and various agricultural industry groups. Special studies are made to determine probable effect of proposed programs on supply, price and consumption of vegetables. Basic statistical series are compiled, improved, and maintained for use in statistical and economic analysis.

(i) Cotton and Man-Made Fibers. This work involves 1.5 professional man-years in Washington. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation of cotton. These appraisals and results of special studies are published 6 times a year in the Cotton Situation, and quarterly in the Demand and Price Situation. A comprehensive analysis of the cotton and man-made fibers situation is presented at the Annual Outlook Conference. Outlook appraisals are frequently presented at regional or State outlook meetings, at meetings of farm organizations, and to various agricultural industry groups. Special analyses are prepared on the probable effect of proposed programs on the price, supply and consumption of cotton and man-made fibers and textile products. Basic statistical series are developed, maintained, improved, and published for general use in statistical and economic analysis. A Handbook, Statistics on Cotton and Related Data, is published annually.

(j) Wool. This work involves 1.5 professional man-years in Washington. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation of wool and other animal fibers. These appraisals are published four times a year in the Wool Situation and in the Demand and Price Situation. Outlook appraisals are presented at the National Agricultural Outlook Conference, at regional or State meetings, at meetings of farm organizations, and to various industry groups. Special analyses are prepared on the probable effect of proposed programs on the price, supply,

and consumption of wool and wool textile products. Basic statistical series are developed, maintained, and improved for general use in statistical and economic analysis. A Statistical Handbook, Wool Statistics and Related Data, is published annually.

(k) Tobacco. This work involves 1.5 professional man-years in Washington. The outlook and situation program provides a continuing appraisal of the current and prospective economic situation of tobacco and tobacco products. Results of these analyses and findings of special studies are published quarterly in the Tobacco Situation and periodically in other publications. A comprehensive analysis of the tobacco situation is presented at the Annual Outlook Conference. Situation and outlook appraisals also are presented at meetings of tobacco grower organizations and trade groups. Special analyses are prepared on the probable effect of alternative proposed programs on the price, supply, consumption and exports of tobacco. Basic statistical series are developed, improved, maintained, and published for general use in statistical and economic analysis.

PROGRAM OF STATE EXPERIMENT STATIONS

For the most part the States depend upon the U.S. Department of Agriculture for the yearly across-the-board commodity situation and outlook research. The State extension staff members supplement and adapt such research information to meet the commodity situation of their States.

Four States have projects that deal specifically with analysis of current price trends and prediction of future prices. There is increasing interest in longer range price prediction because of the growing specialization of farms, which make yearly enterprise shifts less common and less feasible, and which calls for large capital commitments over longer periods of time.

The total direct research effort in the situation and outlook area is approximately 1.7 professional man-years. While not designated as outlook research, much of the research conducted by the experiment stations and reported elsewhere contributes to improved understanding of price-making forces, which in turn improves market situation analysis and price forecasting.

PROGRESS--USDA AND COOPERATIVE PROGRAMS

A. Livestock and Meat

In addition to the regular situation and outlook work, several special analyses were made. Attention was given to the cattle cycle which began its current buildup phase in 1959. Major factors considered were the length of the various cycles, the rate of buildup, and the effects of increased feedlot feeding on the present cycle. An analysis was made of average live weights of slaughter cattle and the relative price differentials between grades as steer and heifer beef production is increased. With the movement toward larger cattle feeding operations, an evaluation was made of the

significance of changing seasonal placement patterns. Because of relatively low prices, particularly for fed cattle, special analyses were made of alternative USDA purchase programs and their effects on price and producer returns.

A study was made of U.S. foreign trade in livestock and livestock products, and results were published in the May issue of the Livestock and Meat Situation report.

Further attention was devoted to appraising the profitability of alternative feeding programs--short fed versus long fed. In addition, an analysis was made of the hog-corn price ratio through time. This analysis indicated that as labor and other costs advance the ratio is becoming a less reliable indicator of farrowings than in earlier years.

B. Fats and Oils

In addition to the regular analytic and outlook work, greater attention was given to some of the minor oilseed crops and to expanding foreign markets. Long-run projections were developed for the major oilseeds, fats and oils as part of an overall set of ERS projections for the farm economy.

Special articles were prepared, for the situation reports, on trends and developments in the coconut oil, marine oil, tall oil, and salad dressing products industries as these commodities are not regularly covered in the situation reports. Tall oil production is closely related to the production of pine sulphate pulp, since it is a byproduct of the Kraft paper manufacturing process. Output increased sharply from 125 million pounds in 1943 to a record 990 million in 1963--and may exceed a billion pounds this year. Major factors in the growth of tall oil consumption have been improvement in quality, development of new uses, and its relatively low, steady price compared with the wide price fluctuations of higher-priced linseed and soybean oils. As the demand for paper increases, the sulphate industry will continue to expand, making possible increased production of tall oil. Also improvement in the recovery rate may boost production, as 15 to 20 percent of the soap is not now recovered.

A special article on coconut oil--an import commodity--showed that U.S. imports of coconut oil and copra (mainly from the Philippines) rose steadily from a postwar low of 554 million pounds in 1952 to 720 million in 1963. The proportion imported as oil increased, and comprised 52 percent of the total in 1963. A large part of the increase in imports has been used in food products, which now comprise one-third of total consumption compared with one-fifth prior to 1952. Suspension of the 3-cent processing tax, relatively low steady prices, and liquidation of the national stockpile of coconut oil by the General Services Administration have stimulated domestic use in recent years.

Work continued on revision of a comprehensive statistical bulletin for fats, oils, oilseeds and their products. Considerable time and effort were again devoted to improving statistical techniques used in forecasting and in the development of new statistical series.

C. Dairy

In addition to regular analytical and outlook work, considerable effort was devoted to analyzing the effects of existing and proposed Government programs on milk production, marketings, consumption, stocks, and farm income from sales of dairy products. Other work in this area included analyses of changes in imports and exports of dairy products; the Canadian dairy program and its effect on Canadian consumption; and U.S. domestic food distribution programs. The series on milk equivalent of manufactured dairy products was revised, starting with January 1958, to include all products for which monthly data are currently available, and to make account of changes in milkfat content each month. Supplement for 1962 to Dairy Statistics Statistical Bulletin No. 303, was revised in December 1963.

In preparation for a revision of Agricultural Handbook No. 62, Food Consumption in the U.S., tables on supply and distribution of dairy products were revised, and export information for 1955 to date was broken into commercial and uncommercial exports. Work has been started on a revision of ERS-63, Government's Role in Pricing Fluid Milk in the United States, to be published next spring.

The Payment-In-Kind program was analyzed to determine its effect on 1964-65 U.S. supplies of nonfat dry milk and butter, domestic prices, and the availability of these products for foreign markets and donations. The world dairy situation was studied to establish causes of current tight world supplies, and an article on this was prepared for Foreign Agriculture.

A special article was prepared on the outlook for dairying five years ahead. Prospects are that consumption of milk in all forms may decline to about 600 pounds per person over the next five years, down about 40 pounds from 1963. Shifts in consumers' preferences are expected further to favor the solids-not-fat component of milk, a challenge calling for responsive adjustments in dairy production and price structures. If present trends continue, cow numbers will continue to decline, and the number of dairy herds will drop, particularly the number of small herds. By 1968 more than half of the cows will be in herds of 30 or more cows. Production per cow is likely to increase enough to offset the decline in numbers, at least maintaining current production levels. About two billion pounds less milk is likely to be used on farms, thus increasing the supply available for sale.

D. Poultry and Eggs

In cooperation with specialists in other parts of the Department, considerable effort was directed to analyzing the impact of Government purchase

programs for eggs and turkeys, and to projecting probable future trends in the egg industry. A cyclical approach to analyzing the supply response in the broiler industry, initiated a year earlier, received further attention in 1963-64. It proved to be of great value in providing a better understanding of the forces that generated over-production and low prices in the broiler industry in late 1963 and early 1964. The results of this analysis, which were kept current, were reported several times in the Poultry and Egg Situation; in January 1964 the results were presented to a top-level broiler industry group organized under the auspices of the Institute of American Poultry Industries. The analysis also received extensive coverage in the poultry press. Such information is useful to the industry in efforts to moderate cycles of over-production and low prices.

An article in the January issue of the Poultry and Egg Situation discussed the income position of contract broiler growers in Georgia. It indicated that such farmers are typically part-time, small-scale operators, with relatively low returns from farming and often with off-farm jobs. In 1962 net farm income for typical Georgia growers averaged only \$777 per farm.

A special article was prepared for the February issue of Poultry Processing and Marketing, a private poultry magazine. The article describes the role that poultry and egg statistics play in facilitating responses to changes in supply and demand. It focused attention on how statistical data facilitate the process of price determination, reduce uncertainty, contribute to sounder decision making, and provide the basis for economic research and analyses.

The May 1964 Situation report featured an expanded statistical section which brought to date many of the series contained in Egg and Poultry Statistics Through Mid-1961, the Department's last comprehensive statistical bulletin relating to poultry and eggs.

E. Food Grains

1. Wheat. During the past year special attention was devoted to analysis of a number of proposed wheat programs. With the passage of the Agricultural Act of 1964, program analysis became more intensive, with much of the work directed at the possible alternatives resulting from the substitution of wheat and feed grain acreages authorized in the Act. Appraisals also were made of the Soviet Bloc's import requirements, and the effect on U.S. exports and prices.

Coverage of the wheat situation was broadened by an article published in the February situation report. The article provided data on all soft wheats produced and marketed east of the Mississippi River, with an analysis of past history and prospective outlook. This material is updated and discussed periodically. The July 1964 issue of the Wheat Situation--the 1964-65 Outlook--was restyled to present the situation and outlook for each of the major classes of wheat. This was in addition to the usual format of discussing the overall wheat situation with only limited references to individual classes.

2. Rice. Statistics covering prices, supply, and distribution of rice were expanded to provide more information on milled rice. This type of information was developed at the request of many people in the rice industry, since they deal almost exclusively with rice in the milled form.

F. Feed

The Feed Grain Program was given special attention during 1963-64 because of its importance in influencing acreage, production, carryover, and prices. Total acreage of feed grains was reduced around 20 to 30 million acres below the 1959-60 base period in each of the years 1961-64--and stocks were reduced about 22 million tons during the first two years of the program. In 1963-64, however, increasing yield resulted in larger production and some increase in carryover into 1964-65. Studies were conducted, in cooperation with other agencies of the Department, of alternative types of Feed Grain Programs, giving special attention to the wheat-feed grain substitution provisions of the 1965 program. The advance in feed prices in relation to prices of livestock and livestock products during the past two or three years also was given special attention. Livestock-feed price ratios, which were very favorable during most of the period 1958-62, became less favorable during the past two years. This has been accompanied by a decline in the feeding rate per animal and a small reduction in total feed consumption during 1962-63 and 1963-64.

Analysis was undertaken to determine the seasonal variation in the production of commercially prepared formula feeds. Publication of the results of this study, along with updating of seasonal indices of feed grain prices, is planned for 1964-65.

Special studies were made on two important phases of the feed situation. The first was a study of sales of formula feeds and feed ingredients by States. Data were compiled from the State Departments of Agriculture for 33 States collecting data on sales or consumption of feed. These data were tabulated so as to show total sales and sales of kinds of feeds for the years 1957 through 1962. This information was published in the February issue of the Feed Situation. The second was a study of the use of urea for feed. Information was developed showing the contribution of urea as a protein feed to the total quantity of high-protein feeds consumed by cattle and sheep and all livestock. Relationships also were developed comparing the value of urea-grain mixtures with oilseed meals, based on prices of such feeds during the past 10 years. Results were published in the August 1964 issue of the Feed Situation.

G. Fruits and Tree Nuts

In recognition of the growing importance of processing as an outlet for fruit crops, the situation and outlook work in this area was strengthened. A special section relating primarily to processed non-citrus fruits was added to the June issue of the Fruit Situation report. The section summarizes the market position for processed fruits and presents background

information on utilization of fruit crops: packs, shipments, and stocks of principal canned and frozen fruits; exports of selected fresh, canned, and frozen fruits; prices received by growers for selected fruits for processing; retail prices for various fresh and processed items; and per capita consumption of fresh and broad groups of processed non-citrus fruits. The information should be particularly helpful to the fruit industry at the start of the processing season for deciduous fruits.

A special study on apples was made at Congressional request. The study examined past trends in the U.S. apple industry, and evaluated longer term supply and demand prospects. Particular attention was directed to Washington State where the large plantings of recent years have caused concern about a potential substantial future increase in production. A special article on apple trends and prospects was included in the August issue of the Fruit Situation.

A paper on U.S. fruit and vegetable trends and prospects was presented in March at the Sixth Annual Agricultural Marketing Conference, at Ohio State University. Tables on per capita consumption of fruits and tree nuts were reconstructed to include Alaska and Hawaii back to 1960.

H. Vegetables and Potatoes

1. Vegetables. An article on consumption trends for vegetables was included in the October 1963 issue of the Vegetable Situation. The study indicated that total per capita consumption of vegetables was about stable during the past decade, but that dramatic shifts occurred in the form of use. Consumption in the fresh form declined about 10 percent, while use of processed increased nearly a fourth. Substantial gains were registered in use of both canned and frozen vegetables. With per capita consumption expected to hold near current levels over the next 5 years, and population increasing, a significant expansion in vegetable use is likely. The recent shifts between fresh and processed suggest that a relatively larger increase will occur in the use of canned and frozen commodities.

2. Potatoes. A study of consumption patterns for potatoes indicated that the per capita use of fresh potatoes has continued to decline during the past decade. But rising popularity of such processed potato products as chips, frozen French fries, and potato flakes appears to have halted the long-term downward trend in overall potato consumption. More than a fourth of the total volume of potatoes now used for food is processed. Through 1968, potato use per person may approximate that of recent years. Because of larger population, however, total requirements for potatoes for food are likely to show a moderate increase. At the same time, processed items are likely to account for an increasing share of the expanding total potato food market.

During the past year the commodity specialist continued to serve as Economic Advisor to the National Potato Advisory Committee. Efforts were devoted to appraisals of the influence of present and proposed programs on potato production, prices, and income. Several basic statistical series were revised to include data for Alaska and Hawaii back to 1960.

I. Cotton

A comprehensive study, released in November 1963, developed estimates of final domestic textile fiber consumption in the United States and identified the major economic factors affecting variations in fiber consumption. The new estimates of consumption take into account shifts in U.S. exports and imports of textiles and the change in composition of fibers used by domestic mills.

An article in the March 1964 issue of the Cotton Situation examined the production of fabric blends in the United States. In recent years, the production of blends has increased sharply even though total fabric production has risen only slightly. For example, production of fabrics from blended yarn of blends of two or more fibers increased more than 50 percent from 1958 to 1962, while non-blended production increased less than 2 percent. Cotton fabric blends increased by over 70 percent compared with a rise of 2 percent for non-blended fabric. Blends where cotton represents the minor fiber have shown the sharpest rise. Further research is needed to measure the full impact of fabric blends on cotton consumption.

Special analyses were prepared for the Secretary's office on the probable effect of various proposed programs on the price, supply, and consumption of cotton. After passage of new legislation, special studies have included the probable effect of changes in mill costs of raw cotton on both wholesale and retail prices for cotton textiles. With a price change in raw cotton, most of the effects at the wholesale and retail level were found to occur several months later. Extensive data and analyses were furnished to the Secretary of Agriculture's Advisory Committee on Cotton and to the National Advisory Commission. Data on use of fibers by the military forces were revised and updated. An annual supplement to a basic statistical handbook, including data for 1963-64, was published. Data were compiled for publication of a basic statistical handbook for extra-long staple cotton. Projections of production and utilization of cotton for 5 years ahead were revised and updated.

J. Wool

The U.S. wool industry during 1964 experienced a further decline in sheep numbers, lower wool production, moderately smaller mill consumption of apparel and carpet wool, a shift in wool use to lower quality wools, and a decline in imports of raw wool and wool textile products. In contrast to this lower production and use of wool, more man-made fibers were produced and their use on the woollen and worsted systems increased significantly. Domestic wool prices, however, averaged above those of a year earlier due to firm demand for foreign wools in world markets.

World wool supplies in the 1963-64 marketing season were moderately less than in the previous season. Lower stocks held by dealers and manufacturers offset the record high production. Demand for wool continued firm as consumption exceeded production for the fourth consecutive season. This resulted in increasing wool prices to the highest levels since 1957. The expanding market for wool products has led the wool industry to use other fibers--especially man-made fibers--with wool to meet these demands.

Special studies were made relating to foreign trade in raw wool and wool textile products and their impact on the U.S. wool industry. The analysis included the probable impact on the incentive payment program of the National Wool Act if reductions were made in the duties on wool and wool products. There likely would be a decline in U.S. wool prices, less duty collected, larger payments made to wool growers under current provisions of the program, and the eventual need for a different method of financing the wool program.

Quarterly estimates were provided to the Commonwealth Economic Committee on U.S. mill activity. The data estimated include mill use of raw wool and all other fibers in the woolen and worsted industry, production of wool tops, yarn, and fabric, and stocks of raw wool and tops.

K. Tobacco

In addition to the usual situation and outlook work, much time and effort were devoted to appraising economic implications of the smoking-health issue. Anticipating publication of the smoking-health report by the Surgeon General's Advisory Committee (published January 11, 1964), analysis was made of the impact of previous similar adverse reports, drawing on both U.S. and British experience. Since publication of the report, all available data bearing on the pattern of tobacco consumption have been analyzed and appraised. In the first quarter of 1964, cigarette consumption declined sharply but subsequently recovered considerably. Concurrent with the decline and partial recovery of cigarette consumption was a spurt in consumption of cigars and pipe-smoking tobacco. The 1964 cigarette consumption is estimated below 1963; consumption in 1965 and beyond will depend largely on consumer reaction to regulatory and educational actions that may be taken. Work was done on longer-term projections of tobacco consumption under varying assumptions. As a possible aid in projection work, arrangements were made to obtain data from Public Health Service surveys on tobacco use and consumer attitudes. Proposed legislation bearing on cigarette smoking and health, and on tobacco price supports was analyzed.

PUBLICATIONS--USDA AND COOPERATIVE PROGRAMS

Livestock and Meat

Rojko, A. S. Livestock and Meat Situation. Published 6 times a year.
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Rockwell, George R. Jr. May 1964. U.S. foreign trade in livestock and livestock products. Livestock and Meat Situation, pp. 18-38.

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Thompson, John W. July 1964. Recent changes in hide marketings. Livestock and Meat Situation, pp. 34-37.

Livestock and Meat Statistics, August 1964. Supplement for 1963 to ERS Statistical Bulletin No. 333, 162 pp.

Fats and Oils

Kromer, George W. Fats and Oils Situation. Published 5 times a year. ERS, USDA, Washington, D. C.

Gazelle, Stanley A. May 1964. Recent trends in U.S. production, use, and price of marine oils. Fats and Oils Situation, pp. 29-37.

Kromer, George W. January 1964. Tall oil production to reach billion pound mark in 1964. Fats and Oils Situation, pp. 31-37.

Kromer, George W. March 1964. Coconut oil imports and consumption increasing in the United States. Fats and Oils Situation, pp. 31-40.

Kromer, George W. August 1964. Salad dressing products: Demand expands steadily in postwar era. Fats and Oils Situation, pp. 37-42.

Dairy

Mathis, A. G. Dairy Situation. Published 5 times a year. ERS, USDA, Washington, D. C.

Mathis, A. G. and Miller, Robert H. November 1963. Five years ahead. The Dairy Situation in 1968. Dairy Situation, pp. 38-43.

Miller, Robert H. February 1964. Developments in canadian dairying, 1962-63. Dairy Situation, pp. 35-40.

Miller, Robert H. June 1964. Domestic food distribution programs. Dairy Situation, pp. 29-35.

Dairy Statistics. November 1963. Supplement to 1962 ERS Statistical Bulletin No. 303, pp. 162.

Poultry and Eggs

Bluestone, H. Poultry and Egg Situation. Published 6 times a year. ERS, USDA, Washington, D. C.

Bluestone, H. November 1963. Projections to 1968 for the poultry industry. Poultry and Egg Situation, pp. 19-21.

Bluestone, H. February 1964. The role of industry statistics. Poultry Processing and Marketing, a Watt Publication, pp. 22-23, 28-63.

Stoddard, E. O. January 1964. Costs and returns on Georgia broiler farms, 1962. Poultry and Egg Situation, pp. 14-21.

Food Grains

Askew, W. R. Wheat Situation. Published 4 times a year. ERS, USDA, Washington, D. C.

Askew, W. R. Rice Situation. Published annually. ERS, USDA, Washington, D. C.

Askew, W. R. February 1964. The eastern soft wheat situation. Wheat Situation, pp. 11-12.

Feed

Clough, Malcolm Feed Situation. Published 5 times a year. ERS, USDA, Washington, D. C.

Ross, J. S. August 1964. Urea expands as a source of protein feed in recent years. Feed Situation, p. 33.

Special Study. February 1964. Commercial feed sales continue upward trend. Feed Situation, p. 29.

Grain and Feed Statistics. March 1964. Supplement for 1963 to ERS Statistical Bulletin No. 159, 65 pp.

Fruits and Tree Nuts

Pubols, B. H. Fruit Situation. Published quarterly. ERS, USDA, Washington, D. C.

Pubols, B. H. June 1964. Processed non-citrus fruit. Fruit Situation, pp. 16-22, 24-35.

Pubols, B. H. August 1964. Apple trends and prospects. Fruit Situation, pp. 22-28.

Vegetables and Potatoes

Kuryloski, Donald S. Vegetable Situation. Published quarterly. ERS, USDA, Washington, D. C.

Kuryloski, Donald S. October 1963. Vegetable consumption trends and prospects. Vegetable Situation, pp. 21-25.

Cotton

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Donald, James R. and Barlowe, Russel G. March 1964. Production of fabric blends in the United States. Cotton Situation, pp. 12-16.

Statistics on Cotton and Related Data. January 1964. Supplement for 1963 to ERS Statistical Bulletin No. 329, 116 p.

Wool

Raymond, Charles E. Wool Situation. Published quarterly. ERS, USDA, Washington, D. C.

Tobacco

Conover, A. G. and Sackrin, S. M. Tobacco Situation. Published quarterly. ERS, USDA, Washington, D. C.

AREA NO. 2. SUPPLY, DEMAND AND PRICE OF AGRICULTURAL COMMODITIES

PROBLEM

Producers, processors, distributors and consumers need more accurate quantitative knowledge of the interrelationships among prices, production, and consumption of farm products. Farmers need to know the prices they may expect from different levels of production to plan for maximum returns. Cooperatives, processors, and distributors need adequate statistical information on price and consumption responses under different supply conditions to aid in distribution of agricultural supplies that lead to maximum returns to farmers. Similarly, Congress and the administrators of farm programs need to evaluate alternative proposals to modify existing price support and production control programs in terms of their impact on production, consumption and prices received by farmers. The development of new statistical methods and the application of existing methods for measuring the interrelationships among prices, production, and consumption of farm products serve these needs by strengthening outlook and situation work, providing the basis for special analyses of alternative agricultural policies, and assisting research workers in agricultural economics.

USDA AND COOPERATIVE PROGRAM

The program of basic research into the factors affecting prices, supply, and consumption of principal agricultural commodities has emphasized four broad research areas: (1) measurement of consumer response to price; (2) measurement of producer response to price and other factors; (3) measurement of the effect of supply and demand factors on prices to farmers and to consumers; and (4) improvement of statistical techniques for measuring agricultural economic relationships.

Changes in emphasis are made from time to time to utilize effectively the professional skills available and to adjust to work having the highest priority. The current emphasis is on a comprehensive analysis of the price-making forces in the feed-livestock economy, especially on factors affecting beef supply. As specific agricultural programs are usually proposed on a commodity basis, the current program is discussed in detail on a commodity basis though much of the actual research is carried on jointly for related commodity groups.

The USDA program of research in this area involves 6 professional man-years.

(a) Livestock and Meat. This work involves 1.0 professional man-year located in Washington, D.C. Research on livestock is part of a comprehensive analysis of the price-making forces in the feed-livestock economy. This study gives special attention to the quantitative measures that show what happens to the production of each commodity within the feed-livestock

sector following changes in price of one or more of the commodities. The study includes analyses for the United States as a whole and for regions to measure differences in price response and to allow for the important farm and non-farm alternatives available in each region.

(b) Feed Grains and Byproduct Feeds. This work involves 0.5 professional man-year located in Washington, D. C. The emphasis in this area is on development of data and statistical analyses which can be integrated into the larger analysis of the feed-livestock economy. The study includes statistical measures of the factors that affect both the supply and demand for feed grains and byproduct feeds. Special emphasis is given to the interrelationships of prices and the substitution possibilities in the utilization of feed grains among the different kinds of livestock. Analyses are also developed to measure the influence of factors affecting the production and supply of feed grains. Consideration is given to the effect of changes in the price of one feed grain on the production of that feed grain and other feed grains competing for the same farm resources.

(c) Cotton and Other Fibers. This work involves 1.5 professional man-years located in Washington, D. C. The purpose of this research program is (1) to measure the influence of economic factors that affect consumption of major textile fibers, and (2) to measure the economic factors that affect the price, supply, and utilization of cotton and cotton products. A major effort during the past few years has been the development of analyses to forecast domestic consumption of cotton, wool, and other fibers. The other major outlet for raw cotton has been exports. Factors causing variation in exports are being examined and quantitative relationships will be developed to be used for forecasting exports of raw cotton. These, along with the equations for forecasting domestic consumption, will improve forecasts of the total utilization of cotton.

(d) Potatoes. This work involves 0.5 professional man-year located in Washington, D. C., making separate analyses for the total U.S. crop, the various seasonal crops, and the major producing areas. The analyses measure the effect of price and other factors on acreage and production of potatoes; the effect of supplies and other factors on price and utilization of potatoes; the effect of price, income, and other factors on consumption; and the effect of price and other factors on storage demand and level of storage.

(e) Tobacco. This work involves 0.5 professional man-year located in Washington, D. C. The research effort is related to (1) economic factors affecting supply, price, and utilization of tobacco and tobacco products; and (2) economic effects of technological changes on supply, demand, utilization, and price of leaf tobacco. Under the first area of work, analyses are developed to measure the influence of factors affecting consumption of tobacco products, prices of major kinds of leaf tobacco, and exports. Under the second area of work, information and analyses are developed for evaluating the effects of consumption trends and of recent technological

changes in tobacco manufacturing on supply, demand, and price of leaf tobacco. These changes are analyzed from the standpoint of immediate and long-range effects on growers, export markets, and tobacco programs. Results from both areas of work are used in program appraisals involving effects of alternative price support levels and marketing controls.

(f) Improvement of Statistical Techniques. This work involves 2.0 professional man-years located in Washington, D. C. In the past decade there have been many changes in econometric methods used in price, supply, and consumption analysis. The research program consists of adapting the latest known econometric techniques and, where necessary, developing new techniques which permit more efficient ways of quantifying interrelationships among prices, supply, and consumption. The effectiveness of statistical relationships for forecasting economic behavior may depend on the method of statistical estimation used. Special analyses are made to test the relative merits of obtaining forecasts for different methods of statistical estimation.

Another important way of improving techniques is the adaption of electronic data processing methods to facilitate the statistical and econometric work of the Division. This involves continual evaluation and carrying out of feasibility studies for application of automatic data processing systems to computational problems and the processing of tabular material. The latest programming methods are searched out and reviewed to determine where new methods or programs can be used or where existing programs can be modified.

PROGRAM OF STATE EXPERIMENT STATIONS

The States are engaged in intensive and extensive research in price analysis. Much of it is of a basic nature to gain an understanding of price-making forces. Most of this research is commodity oriented, though some projects are of a highly mathematical and theoretical nature aimed at improving price analysis methodology.

Research is being conducted to determine the demand functions for a large number of commodities in all the major commodity groups. This research will indicate the price elasticity, the income elasticity, and the cross elasticities of the commodities being studied. Some studies will show the effect of ethnic origin, race and various social factors such as urbanization and working wives on demand. There is increasing interest in the various components of demand at the higher and lower levels of the demand curve. This is being related to advanced pricing methods and to government programs such as marketing agreements and the stamp plan. Because researchers are finding that some changes in demand cannot be explained by price, income and supply of competing commodities there is increasing research interest in the basic motivational factors that determine eating and clothing habits.

The supply response to price changes is a matter that is receiving considerable attention. This is in part because of its significance to farm incomes and government programs. Significant progress is being made in understanding the relationship of the capital structure on farms to supply response and thus to the differences between long-run and short-run supply responses. Supply responses are also being studied from the standpoint of how and why farmers misjudge the market and how inertia also interferes with optimum resource allocation.

There are some projects to determine the changes taking place in the seasonal price pattern of commodities and how farmers can better utilize this information in making production and marketing decisions.

Some projects deal with the effect of quality differences on price and how the market could be improved to reflect prices more commensurate with the use, quality, or performance. Also there is interest in price prospects for new products arising from utilization research, and there is expanded interest in price relationships abroad.

The total State Experiment Station research effort in this area is approximately 53 professional man-years: 2.2 for grains, 1.4 for cotton, tobacco, peanuts, and other field crops, 4.0 for fruits and vegetables, 11.8 for livestock, meat and wool, 14.1 for dairy products, 3.1 for poultry and eggs, 4.0 for forest products, 0.2 for ornamentals and other specialty crops, and 12.2 for general studies.

PROGRESS -- USDA AND COOPERATIVE PROGRAMS

A. Livestock and Meat

Because of growing beef imports in 1963 and price pressures in the domestic cattle market, a special analysis was made to measure the relative importance of domestic fed beef production, cow beef production, beef imports, supplies of competing meats, and other factors on fed cattle and cow prices. In this study, the market for fed cattle and the market for cow beef were considered as two distinct but related markets. The analysis indicated that (1) a one-pound per capita change in fed beef production resulted in a change in the opposite direction of 50 cents in the Choice steer price at Chicago, (2) a one-pound change in the aggregate of cow beef production and beef imports changed the Choice steer price by about 30 cents in the opposite direction, and (3) most of the variation in fed cattle prices in the past two years could be explained by variation in domestic steer and heifer beef production. The study also showed the impact of beef and veal imports on cattle prices at different levels of imports. The results from this study are quite useful in making price forecasts and in appraising the effect of the government beef purchase program on fed cattle and cow prices.

Work on the price and supply of beef cattle has been concentrated on measuring growth in the beef inventory and the cycle in the beef inventory numbers. Growth rates for the period 1947 to date for numbers and value of the beef

inventory, and for production of beef have been evaluated to serve as the basis for determining the necessary levels of herd placements that would be consistent with recent growth rates and possible rates in the future. The relationship between slaughter weights of steers and the phase of the cattle cycle was studied. These findings were reported in a special article. A beef inventory model has been constructed and designed to predict the number of beef cows, steers, heifers, bulls and stags, and total beef cattle numbers six months in advance. Statistical results from this model, when completed, will be useful in making the annual outlook forecast each fall. A regional description of the location of basic beef cow herds has been completed, showing the relative concentration of the basic beef cow herds in the Southwest and Western United States in relation to other sections of the country.

Some progress has been made in developing a supply response model which treats separately the factors affecting the supply of fed beef and those affecting the supply of non-fed beef. Considerable time was spent in the development of data which would permit separate treatment of the fed beef and non-fed beef sectors. For example, regressions were used to estimate total liveweight of steers, heifers, and cows. This was then separated into the liveweight of fed beef and the liveweight of non-fed beef.

Work is also getting underway to improve quarterly forecasts of marketings and prices of fed cattle, prices of feeder animals, and the number of animals placed on feed. Some preliminary analyses have been made of the factors affecting the feeder market and the fed cattle market, and the interrelationships between these two markets.

B. Feed Grains and Byproduct Feeds

Work in this area was devoted to determining the relationship of feed grain prices to (1) price of feeder cattle, (2) number of cattle put on feed, (3) quantity of feed grains fed to beef animals, and (4) the weight to which cattle are fed. In addition, the total quantity of feed grains fed was related to the average liveweight of the fed animal to estimate total production of fed beef. Also, exploratory analyses were completed of the effects of hay prices and range conditions on the buildup and depletion of beef cow numbers.

C. Cotton

A technical bulletin released in November 1963 developed estimates of final domestic textile fiber consumption in the United States and measured the effect of the major economic factors on variations in consumption. Highlights of the results were presented during the last reporting period. Results from this study are being used in special analyses on probable effect of changes in mill costs of raw cotton on both wholesale and retail prices of textiles.

Work on price and utilization of cotton and cotton textiles was continued, and a manuscript is being prepared, with separate statistical analyses to isolate the important factors in all major outlets. Results of analyses indicate that the level of U. S. prices in foreign markets and changes in foreign production and consumption of cotton and synthetic fibers have the most effect on U. S. cotton exports.

Results from statistical analyses also indicate that total production of cotton in foreign countries is influenced by the level of world cotton prices. Consumption abroad has risen in response to rising standards of living and increases in population. Changes in world cotton prices were found to have a significant effect on consumption. Additional analyses are underway to determine the effect of various factors on cotton consumption and production in major individual foreign consuming countries.

Exploratory analyses were made of the demand for groups of fabrics in the United States such as print cloth, sheeting, and narrow fabrics, to gain insight into the domestic utilization of cotton. Special attention was given to the sharp increase in use of man-made fibers and production of broad woven goods.

Estimates of fiber used by the military services were revised and updated. Also, conversion factors for estimating the raw fiber content of U. S. exports and imports of textiles are being revised, and analysis is being made of recent changes in U. S. trade in cotton manufacturers.

D. Potatoes

Substantial progress has been made in preparation of a bulletin on price, supply, and demand for potatoes. Several demand analyses were revised. In addition, a special study was prepared to determine the probable effect of a proposed acreage allotment program on supply and price of fall (storage) potatoes and early season potatoes. It was assumed that a program would be operational for storage potatoes but not for winter and early spring potatoes. A paper was prepared on competitive behavior and substitutability between early season potatoes and storage potatoes. Results indicated that consumers readily substituted one type of potato for the other, but they have preferences for certain types of potatoes and are willing to pay more for their choice.

E. Tobacco

Some revisions were made in seasonal factors following further analysis of seasonality of manufactured tobacco and exports. Trends in utilization of tobacco as affected by recent technological changes were analyzed as to their impact on growers, and findings were included in situation and outlook reports. In 1963, use of tobacco in cigarettes is estimated to have increased about $1\frac{1}{2}$ percent over 1962, whereas cigarette output increased 2.8 percent. Analysis was made of factors affecting snuff consumption. Review was made of the historical experience, both U. S. and British,

following release of adverse health reports, in preparation for analyzing the economic impact of the smoking-health report of the Surgeon General's Advisory Committee. An analysis also was made of alternative methods of supply adjustment.

F. Improvement of Statistical Techniques

Work was continued in explaining ways that statistical analyses might be used to improve short-run forecasts of price, supply and consumption that are necessary in situation and outlook work. This information and other assistance was given to situation writers and other research workers in formulating economic models, and developing and adopting statistical and econometric techniques.

Assistance was given in making computations for and technical review of a manuscript, "Demand and Price Analysis: Some Examples from Agriculture", by Dr. F. V. Waugh. This bulletin develops several new methods of measuring demand and forecasting prices. It includes methods for measuring the elasticity of long-run demand and the elasticity of demand over shorter periods of time. In addition, it contains a method for maximizing total revenue when a product is sold in several separate markets.

A special analysis was made to determine the effects of the price of potato futures contracts on cash prices. This included an analysis of the economic factors affecting cash prices of potatoes and determining whether the same economic factors could be used to explain movements in price of futures.

Further progress towards the development and modification of computer programs in preparation for the proposed data processing installation was made during the current reporting period.

A computer program was developed for the Cotton and Other Fibers Section of the Commodity Analysis Branch to convert Census import statistics for varied textile products to a common reporting unit--pounds of raw fiber equivalent. These data, together with certain ratio calculations, are presented individually and then summarized into designated classes and groups for each of the fibers: cotton, wool, and manmade. This project was first designed for the IBM 650; now it has been redeveloped and expanded for the IBM 1401-7074 machine complex. The expansion was found necessary because of a revision in the Census coding classification that more than tripled the number of items handled. Also, as a result of this expansion, a contract was negotiated with the Census Bureau that authorizes the transfer of their original data to a new magnetic tape to be used on USDA IBM equipment. This is a great improvement over previous procedures, since certain coding and editing operations and the punching and verification of IBM cards are eliminated. Instead the Census converted tape is used directly by the new program as input and the necessary computations follow.

The stepwise multiple regression program was modified further to reduce excessive handling of tape reels inherent in the original procedure which was in two phases--each placed on a different reel of tape. Machine operators were required to replace Phase 1 reel with the Phase 2 reel to secure a complete solution. The operation was time-consuming and cumbersome when a succession of problems was submitted for computation, since the operator had to intervene with each new set of data. This has been modified to reduce manual intervention to a minimum. Based on control information submitted by the analyst, any number of problems may be placed on tape and the program automatically moves between phases and among problems. Further changes have been introduced to provide for easier identification and correction of errors that interfere with the normal solution of a regression problem.

Another program, "Forecasting by Econometric Systems," written by IBM personnel for the IBM 7090, is being reviewed for its application to ESA projects. Computing time for experimentation and testing has been secured at the 7090 installation of a private contractor. The program is sufficiently generalized to accommodate varying sizes of problems. Operating on each equation of the model individually, it presents for comparison the results of solutions via the least squares, two-stage least squares, and limited information methods. When needed, a full information solution of the model may be obtained.

PUBLICATIONS -- USDA AND COOPERATIVE PROGRAMS

Livestock and Meat

Rojko, A. S. November 1963. The import situation for beef and veal. Livestock and Meat Situation, pp. 35-49.

Walters, Forrest E. March 1964. The inventory cycle and slaughter weights of steers. Livestock and Meat Situation, pp. 25-28.

Cotton and Other Fibers

Donald, James R., Lowenstein, Frank, and Simon, Martin S. November 1963. The demand for textile fibers in the United States. U.S. Dept. Agr. Tech. Bull. No. 1301, pp. 150.

Donald, James R., and Barlowe, Russell G. March 1964. Production of fabric blends in the United States. Cotton Situation, pp. 12-16.

Potatoes

Hee, Olman. 1964. A seasonal potato market: area of competitive behavior. Paper presented at the American Farm Economic Association Annual Meeting, Lafayette, Indiana, August 17, 1964, pp. 5.

AREA NO. 3. FARM INCOME

PROBLEM

Timely and accurate statistical information and analyses on the farm income situation and outlook are essential to farmers, legislators, administrators, and others in developing production and marketing plans and in evaluating the needs for and operations of public programs for agriculture. Changes in the structure of commercial agriculture require the development of new methods and sources of data to maintain and improve the representativeness of farm income measures. Quantitative measures of the interrelationships between agriculture and other sectors of the economy are needed for assessing the impact of changes in the farm sector on related nonfarm sectors and the impact of changes in nonfarm sectors on farming. Centralization and maintenance of a large number of economic time series pertaining to agriculture is required to permit prompt and accurate handling of a continuous flow of a wide diversity of requests for economic data on agriculture.

USDA AND COOPERATIVE PROGRAM

The Department has a continuing long-term program of economic and statistical research which includes the development of new methods and sources of data and the regular preparation of current estimates and projections. This work is located in Washington, D.C. The Federal program of research in this area involves 13 professional man-years. This is divided as follows:

(a) Current estimates of farm income and expenditures.--Economic and statistical analysis is used to fulfill three main objectives: (1) Development, preparation, and interpretation of monthly, quarterly, and annual estimates of farm income and production expenses for the nation as a whole and for the States and regions; (2) analysis and interpretation of economic forces producing changes in farm income and expenses; and (3) projections of levels of farm income and expenses in the near future based on the outlook of economic forces and trends in major agricultural indicators.

In addition to the basic series, miscellaneous farm series of a related nature are developed and published. Relationships between farm income and marketings, prices and expenditures are analyzed. Shifts in the components of farm income and expenses are appraised and studies are made of short- and long-time trends. Farm and nonfarm income comparisons are made and analyzed.

The work is carried on in Washington, D.C. and close cooperation is maintained with the Statistical Reporting Service and the National Income

Division of the Department of Commerce. Cooperation is also maintained with other agencies of the Department, other Federal agencies and certain private trade agencies.

Five professional man-years were devoted to this area of economic research during the reporting period.

(b) Research and methods relating to farm income.--This is a continuing long-time project involving 5 professional man-years of research directed toward the following objectives: (1) Development of methods and sources of data for improving estimates of farm income and expenditures; (2) development of estimates of farm income by economic class of farm; (3) measurement and analysis of relationships between incomes of farm and nonfarm population; and (4) measurement and analysis of relationships among agriculture and other sectors of the economy. Most of this research is done at departmental headquarters in Washington. Some work is also carried on in cooperation with other Federal agencies within and outside the Department.

(c) Analysis of the impact of alternative farm programs on agriculture and the general economy.--Work in this sector involves the development of meaningful estimates and projections of the probable effects of proposed alternative farm programs on farm income and on the general economy. This work involves cooperation with other Branches of the Division, other Divisions of ERS, and other agencies of the Department. One professional man-year is devoted to this field of research.

(d) Centralization and maintenance of economic data pertaining to agriculture.--Two professional man-years were involved during the reporting period. Prompt and accurate handling of a continuous flow of widely divergent requests for economic data is the objective of this work. Farmers, administrators, legislators, and the general public require accurate and meaningful data and analyses of the economic situation in agriculture.

PROGRAM OF STATE EXPERIMENT STATIONS

The States rely considerably upon the USDA for research into the farm income situation. Some States conduct supplementary research, especially into certain aspects of farm expenses. Farm account route records also play an important role in providing considerable detail as to what is happening to farm income in certain types of farming areas and even generally.

Presently two States are studying the agricultures of the State, or some part of it, from the standpoint of its basic importance to the total economy of the State. In many instances agricultural products are the major export of the State and the foundation upon which many supplementary enterprises are built.

Altogether three States currently have research projects specifically dealing with the determination of farm income and analysis of its trends. The total research effort on farm income is approximately 0.6 man-years.

PROGRESS -- USDA AND COOPERATIVE PROGRAMS

A. Current estimates of farm income and expenditures

Farmers' realized net income in the first half of 1964 was estimated at a seasonally adjusted annual rate of \$12.3 billion, down about 1 percent from January-June 1963. But despite this slight decline in aggregate realized net farm income the average income per farm was slightly above a year earlier as farm numbers continued to drop.

Realized gross farm income in 1963 was \$41.7 billion, \$800 million higher than in 1962 and \$2.1 billion higher than in 1961. Cash receipts from farm marketings were estimated at \$36.9 billion in 1963 compared with \$36.1 billion in 1962 and \$34.9 billion in 1961. Farm production expenses also rose slightly over the past two years, and the estimated total of \$29.2 billion for 1963 was \$900 million more than a year earlier and \$2.2 billion more than two years earlier. Rising realized gross farm income and production expenses over the past two years about offset each other, and realized net farm income in 1963 was estimated at \$12.5 billion compared with \$12.6 billion in 1961 and 1962.

Realized net income per farm was estimated at a record high of \$3,504 in 1963, up about \$500 per farm since 1960. In 1963 realized net farm income per farm rose in the West North Central Region, the South Central Region, and in the Western States, but declined some in the other three principal regions of the country. Realized gross income per farm was also at a record high of \$11,682 in 1963 and all major regions in the country shared in the increase, with only four of the 48 contiguous States showing a drop from 1962.

The per capita personal income of the farm population from all sources went up to a record high \$1,488 in 1963. Of this total, \$976 came from farm sources and \$512 from nonfarm sources; both of these were higher in 1963 than a year earlier. The per capita disposable personal income of the farm population was also at a record high of \$1,376 in 1963, the fourth consecutive year it has been higher than a year earlier. Although the per capita disposable personal income of the farm population has risen in recent years, it was only 63 percent of the per capita disposable income of the nonfarm population in 1963.

A special article "Production Expense Patterns, 1950-1962", was published in the Farm Income Situation, April 1964. The article showed that farm production expenses rose sharply from 1950 to 1962, both in current and constant dollars. Inputs of farm origin--feed, seed, and livestock--are taking a larger share of total expenses than formerly, particularly in constant dollars. In real terms, purchased goods and services yielded about

the same output per unit in 1962 as in 1950. Rates of returns to agriculture have declined because of the drop in prices of farm products relative to prices paid by farmers.

Also during the reporting period, progress was made in revising farm income estimates in total and by accounts back to 1949. These revisions incorporated data not available previously or not useable for other reasons from various sources including the Census of Agriculture, production and disposition reports, and other public and private sources. The data are being supplied to the Department of Commerce to be incorporated into a general revision of the national income series.

The Project Leader of ESA-3 and the Farm Income Research and Methods Section's Project Leader participated as members of an agriculture subcommittee of the Wealth Inventory Planning Study. A report was issued by this Committee stating the problems and possibilities of a benchmark inventory of the nation's wealth with special application to agriculture.

B. Research and methods relating to farm income

1. Development of a new series on disposable personal income of the farm population.--Estimates of the disposable personal income of the farm population were developed from 1934 to date. This series was published for the first time in the July 1964 Farm Income Situation and will be brought up to date and published each year as another continuing series on farm income.

Disposable personal income of the farm population is a measure of the income that farm people have available for family living expenditures, or for savings or investment purposes. It is defined as the personal income of the farm population from all sources, farm and nonfarm less personal tax and nontax payments.

The new series showed that in 1963 the per capita personal income of the farm population reached a record high of \$1,376 or 63 percent of the per capita disposable personal income of the nonfarm population. Between 1960 and 1963, the per capita disposable income of the farm population increased 18 percent, compared with a rise of about 9 percent for the nonfarm population.

2. Development of estimates of farm income by economic class of farm.--Income measures were developed for 1959-63 to depict changes in the income positions of various groups of farms within agriculture more clearly. In cooperation with the Bureau of the Census, benchmark data on the off-farm income of farm operator families, by economic class, were obtained from a Sample Survey of Agriculture for 1960. Estimates of income of farm operator families from farm and nonfarm sources for the years 1959-63 by economic classes were developed on the basis of these data, data from the 1959 Census of Agriculture, and regularly published income series of the

Farm Income Branch. Estimates for 1959 were included in Food and Agriculture -- A Program for the 1960's, in which the Department's major programs and policies were outlined. Distributions of income of farm operators from farming operations only, for the years 1959-63, are expected to be published for the first time in the November issue of the Farm Income Situation.

Major conclusions drawn from such new measures were: (1) Income sources and income problems on nearly 1.6 million farms with sales of \$5,000 or more are substantially different from those on farms with sales below \$5,000; (2) even though levels of living on some of these larger farms are relatively good, earnings are generally not comparable to nonfarm earnings; and (3) between 1959 and 1963 realized net income increased 13 percent for farms with sales of \$10,000 or more; 11 percent for farms between \$5,000 and \$9,999; 10 percent for farms with sales between \$2,500 and \$4,999; and 7 percent for farms with less than \$2,500.

In connection with the research on parity income reported below, estimates of gross and net farm income and production expenses by major economic class of farms were developed for 1961-63.

An experiment designed to explore the possibility of obtaining information on farms and farm characteristics by economic class of farms in the regularly scheduled June Enumerative Survey is continuing. This experiment involves cooperation with the Farm Production Economics Division and the Statistical Reporting Service.

3. Measurement and analysis of relationships between agriculture and other segments of the economy.--Work has been completed on the development of estimates of input-output transactions accounts for 18 agricultural sectors for the year 1958. The preparation of these accounts involved the processing of thousands of estimates from hundreds of sources. Work on reconciliation of agricultural sector accounts with those for nonagricultural sectors developed by the National Economics Division of the Department of Commerce has been completed and a general inverse of the transactions matrix has been computed. Thus, statistical measures are available for estimating both the direct and indirect effects upon individual agricultural sectors of final deliveries by every other sector in the economy. The adjusted matrix should also serve as a useful analytical tool for measuring input requirement implications of program adjustments in specific commodity areas. Work is now underway on updating the 1958 data to 1961 for the purpose of developing a complete transactions table for that year. This project is being conducted in cooperation with the staff of the National Economics Division of the U.S. Department of Commerce.

C. Analysis of the impact of alternative farm programs on agriculture and the general economy

1. Projections of the effects of alternative programs for wheat and cotton on gross and net farm income and farm production expenses in 1964 were prepared for the Secretary's office early in 1964. Estimates of the effects of administration programs on farm income during 1961-1963 compared with programs in effect in 1960 were made at the request of the Secretary's office.
2. Estimates of the income necessary to yield returns to the capital and labor engaged in agriculture equal to those earned by similar resources in the nonfarm segment of the economy were prepared for 1962 and 1963. These estimates carry forward the research in measuring the new concept of parity income discussed in last year's report.
3. In view of the increased importance of Government payments to farmers in recent years, a summary figure analogous to the parity-ratio was developed to incorporate Government payments. This measure, identified as "Adjusted Parity Ratio" was calculated beginning with 1933 and published in the Agricultural Prices, January 1964. The "Adjusted Parity Ratio" for 1963 was 81 percent compared with the actual ratio of 78 percent.

D. Centralization and maintenance of economic data pertaining to Agriculture

During the past year consideration of agricultural legislation, the increased emphasis on raising incomes of low-income groups, particularly in rural areas, and the presidential campaign, added notably to requests for agricultural information and analyses from the general public, officials of the Department, offices of Congressmen and congressional committees.

The bulk of the work in the Statistical Services Section is concerned with assembling, compiling and disseminating agricultural data in two basic ways. A large number of tables are prepared for statistical publications such as Agricultural Statistics, Statistical Abstract of the U.S., World Almanac, International Year Book, Economic Report of the President, Whitaker's Almanac, and Bulletin Almanac and Yearbook. The Section continues to prepare and circulate a looseleaf statistical handbook providing up-to-the-minute statistical information to policy makers in the Department and other high-ranking individuals. A somewhat smaller list of persons is serviced on a continuing basis by supplying specified information by telephone, mail, or personal contact. Providing charts for the Handbook of Agricultural Charts and the outlook presentation to the Agriculture Subcommittee of the Appropriations Committee is also of a continuing nature.

The second basic aspect of the work is in processing a large number of requests for supplementary information; such requests are for later information or greater detail than shown in periodic releases, summaries not available in one publication, or analyses, charts, or interpretations based on published data. The workload in this field has increased significantly.

Publications issued or revised include Background on our Nation's Agriculture, the Fact Book of U.S. Agriculture, and State Summaries. The Section did considerable work on the Congressional committee print Food Costs - Farm Prices.

PUBLICATIONS -- USDA AND COOPERATIVE PROGRAMS

Current Estimates of Farm Income and Expenditures

The Farm Income Situation, published in February, April, July, and November of each year.

Farm Income State Estimates, 1949-1963, A Supplement to the Farm Income Situation for July, August 1964.

Paddock, W.C., and Dallavalle Q.F., April 1964, "Production Expense Patterns", in FIS-194, pp 12-23.

AREA NO. 4. ECONOMIC OUTLOOK, CONSUMPTION AND LONG-RUN PROJECTIONS

PROBLEM

This area of research encompasses comprehensive continuing analyses of changes in domestic and foreign economic activity, related agricultural policy, technological developments, food consumption and nutrition, and their impact on the agricultural situation and outlook. These analyses are concerned with the current situation, economic outlook, and longer-run projections and policy analysis. They require the development of statistical data relating to the demand for farm products, domestic consumption trends, foreign trade, the supply-utilization balance for major farm products, farm prices and incomes, and general economic activity. Such data and economic analyses based on them are essential to farmers, legislators, administrators, private businessmen, and others concerned with the development and appraisal of policy and programs and with changes in the production and marketing of farm products.

USDA AND COOPERATIVE PROGRAM

The Department has a continuing long-term program designed to appraise the economic outlook, consumption of farm products, longer-run prospects for agriculture, and policy appraisal. The staff of the Outlook and Projections Branch participating in this work averaged for the current program $11\frac{1}{4}$ professional man-years. Programs and activities in the three areas of work are discussed below.

(a) Demand analysis and agricultural outlook.--Continuing appraisals are made of developments in economic activity, foreign demand, farm policy, and agricultural resource use. Consequences of these developments are analyzed with respect to implications for the demand and supply of farm products, prices received and paid by farmers, farm income, and the general agricultural situation and outlook. Results are reported quarterly in the Demand and Price Situation, and frequently in the Farm Index, the Agricultural Situation, special articles, presentations at national and regional agricultural outlook conferences, bulletins, professional journals, memoranda, and correspondence. Underlying the current situation and short-run outlook reports is a continuing research program which develops economic frameworks and statistical analyses of the structure of the general economy and its relationship to developments in agriculture and in the various sectors of the farm economy.

The demand analysis program is located in Washington, D. C. Informal cooperation is maintained with other agencies of the Federal Government, State Universities and the Agricultural Extension Service, and with various private organizations.

During the past year an average of about $3\frac{1}{2}$ professional man-years were devoted to Demand Analysis and Agricultural Outlook.

(b) Long-run agricultural projections.--Analyses and research deal with the longer-run prospects for farm output, domestic and foreign demand, farm prices and income, and the identification and measurement of forces bringing about changes in agriculture. Some of these forces are: growth in the general economy and in population, regional shifts and changes in the age distribution of the population, changes in consumer tastes and preferences for farm products, technological developments and productivity trends in agriculture, and farm programs. Although these forces are known to affect farm output, income, prices, and markets, their measurement and quantification require necessary analytical tools. Accordingly, a significant part of long-run projections work includes analyses to measure more precisely the influence of and relationship among these forces effecting changes in agriculture.

The work is located in Washington, D.C. Cooperative working arrangements with other Divisions of the Economic Research Service and with other agencies of the Government are effected through the ERS Committee on Economic Projections. Informal contacts are maintained with State Universities, public and private research groups, private businesses, UN agencies, and others interested in longer-run appraisals for agriculture.

Effort devoted to this line of work totaled about $3\frac{1}{2}$ professional man-years plus the contribution of many commodity specialists in other Branches of ESA, other Divisions of ERS, and other agencies. The work of other contributors is reported by their Branches.

(c) Supplies and utilization of food and other agricultural products.--This work continues a long-term program of measurement and appraisal of the supply and consumption of foods and other farm products. Indexes of per capita consumption of major food products and of total supply and utilization of all farm products are developed and regularly published. Food consumption trends and patterns, retail food price movements, expenditures for food, and foreign trade in food products are currently evaluated and short-run outlook formulated. Supporting research is concerned with the development of techniques and methodology useful in short-term outlook. Analyses of the food situation, results of research work, and consumption data are published regularly in the National Food Situation, various bulletins and handbooks, annual statistical supplements, official memoranda, professional journals, and speeches.

The work is located in Washington, D. C. There are no formal cooperative agreements with other Government agencies or private groups, but extensive informal cooperative working arrangements are maintained with

other Divisions and agencies of USDA, other Federal and State agencies, Universities, and private research groups. Professional time spent in this area of work averaged about $4\frac{1}{4}$ man-years during the past year.

PROGRAM OF STATE EXPERIMENT STATIONS

Immediately after World War II the states made quite a few long-run projection studies but in recent years the number has declined. The USDA research in this area has been very helpful to the states. Currently only six states have specific research in this area; however, the state studies on supply and demand of farm commodities very often involve studies of consumption and utilization and provide parameters for projections into the future.

The total research effort on this area is approximately 3.0 professional man-years.

PROGRESS -- USDA AND COOPERATIVE PROGRAMS

A. Demand analysis and agricultural outlook

The agricultural situation and outlook for 1964 was reported in November 1963 and reappraised again in April 1964 in the Demand and Price Situation. The output pointed to "continued expansion in domestic demand for farm products and record high agricultural exports..." "Prices received for farm products are expected to average a little below 1963. Prices paid by farmers.....will continue to rise.... Thus, some further tightening in the general cost-price squeeze is indicated for agriculture." "Realized net farm income is expected to be lower in 1964."

Quarterly reappraisals of the agricultural outlook and general economic situation were prepared for release in the Demand and Price Situation in January, April, and July; monthly reports were released through the Farm Index. These reports included discussions of general business conditions, agricultural programs, domestic and world markets and prices, operations of the CCC, farm prices and incomes, the Federal Budget and balance of payments problems. Appraisals including charts and tables were prepared for the Outlook Chartbook and Agricultural Statistics.

Research work included developments of an analytical framework appraising supply prospects for major commodities in relation to resource inputs and farm programs. This framework was used in appraising prospective changes in domestic use of farm products, farm product prices, changes in carryover stocks, and farm income prospects. Indices of carryover stocks and price support levels were developed and used in appraising year-to-year fluctuations in prices received by farmers.

Statistical analyses were conducted and frameworks developed to explain changes in business conditions, employment, consumer income, and the demand for farm products.

B. Long-run agricultural projections

Work was completed during the past year on projections for agriculture to 1968 based on farm programs of 1963 and other program alternatives. An administrative report was prepared in which detailed projections of output, domestic and foreign demand, farm prices and income were presented for the major farm products. This report showed that farm output probably will continue to out-run domestic and foreign demand at prices which result in "parity" incomes for farmers. Moreover, under farm programs in effect in 1963, stocks of some farm commodities, particularly cotton, would rise to record levels. However, projected farm income would remain near 1963 levels, if these programs were continued through 1968. Summary results of these projections were presented at the National Agricultural Outlook Conference in November, 1963.

In connection with the World Food Budget, projections of domestic supplies and consumption of farm foods to 1970 were made to be included with similar projections for other Nations. These projections showed that the diet of the average American will continue to improve as larger quantities of meat, poultry, fruits, and vegetables are included in their food. As farm output is expected to continue to grow faster than domestic requirements, food supplies available for commercial export and Food For Peace programs will be significantly higher in 1970 than they are at present.

Projections of farm production requirements to 1980 were prepared for the Department's Land and Water Policy Committee. This analysis included estimates of land and other resource requirements in 1980 as well as farm output, and domestic and foreign demands. These projections are to be used by the Committee in appraising national needs for water resource development.

A number of analyses were prepared under different program assumptions and under modified free market assumptions. Most of these were for administrative use, budget appraisal, and requests from the Administrator, ERS; Director of AB; and in some instances, for Congressmen and others.

C. Supplies and utilization of food and other agricultural products.--

The National Food Situation reported that, "For the year (1964), food expenditures are expected to continue around 4 percent above a year earlier. At this rate, consumer would spend about $18\frac{1}{2}$ percent of their disposable income for food this year. Per capita food consumption in 1964 is expected to rise nearly 1 percent above the 1963 level.

....Sharply increased consumption per capita is taking place for beef and poultry meat.... Reduced per capita consumption is anticipated this year for pork, lamb and mutton, and processed fruit.... Retail food prices averaged 1 percent higher during the first half of 1964 than during first half 1963.... As in 1963, increased prices of food from crop products accounted for all of the retail food price increase in the first half."

Special articles that appeared in the National Food Situation included, "Seasonality in Retail Food Prices," "Nutritional Review," "Enrichment and Fortification of Foods," "World Food Situation," "World Food Problem," "Projections of Food Consumption to 1968," "Consumer Price Index Revision," "Imports as a Source of Food," and "Coffee Supplies and Prices."

A presentation was made giving the annual outlook for food at the National Agricultural Outlook Conference in November, 1963.

A basic handbook, U. S. Food Consumption, giving information on per capita food consumption was published. It extensively revised and updated Consumption of Food in the United States, 1909-52, 1953. This handbook includes reorganized food consumption tables incorporating consumption in Hawaii and Alaska with the other 48 states, the per capita food consumption index rebased to 1957-59, newly developed supply and utilization tables replacing the supply and distribution tables, and updated text describing sources of data and methodology.

Statistical tables on the supply and utilization of all major foods were prepared quarterly and, though unpublished, were widely used throughout the Department and other Government agencies. Summary tables and charts are published regularly in the National Food Situation, the Outlook Chartbook, and Agricultural Statistics.

PUBLICATIONS -- USDA AND COOPERATIVE PROGRAMS

Demand Analysis and Agricultural Outlook

Demand and Price Situation, published quarterly.

Long-run Agricultural Projections

Daly, R. F. 1963. Long-run economic projections: a review and appraisal. Agricultural Economics Research. Vol. XV, No. 4. pp. 113-121.

Daly, R. F. 1964. Agriculture in the years ahead. Proceedings, Association of Southern Agricultural Workers, Inc. Atlanta, Ga. Feb. 1964. pp. 12-14.

Egbert, A. C. 1964. Projections of food consumption to 1968. National Food Situation. Feb. 1964. pp. 24-28.

Egbert, A. C. and Heady, Earl O. 1964. Efficient regional allocation of farm products and programmed supply prices. Agricultural Economics Research. Vol. XVI, No. 1. pp. 1-11.

Supplies and Utilization of Food and Other Agricultural Products

National Food Situation, published quarterly.

U.S. Food Consumption. 1964. Agricultural Handbook. approx. 248 pp.

Hiemstra, Stephen J. 1963. Food. Family Economics Review, ARS 62-5. pp. 5-7.

AREA NO. 5. AGRICULTURAL HISTORY

PROBLEM

Historical research on major developments in farming and major changes in policies, programs, and organization of the Department of Agriculture provides a background for understanding current agricultural problems, for developing governmental programs aimed at solving these problems, and for developing a wider understanding of the past achievements of agriculture and the Department. Historical studies have provided some of the basic information needed by the Secretary of Agriculture, advisory committees appointed by the Secretary of Agriculture, Presidential commissions, and the Congress in formulating agricultural programs and policies. The accuracy of the studies and the promptness with which needs have been met have contributed to the more effective functioning of the Office of the Secretary and other policy-making offices and agencies.

USDA AND COOPERATIVE PROGRAM

The Department has a continuing long-term program of historical research carried out by historians working in close cooperation with economists, statisticians, physical scientists, and others. The program involves both basic research and the application of the results of basic research to current problems.

This project includes all formal research work in agricultural history carried on by the Federal Government. The effort devoted to the project totals 5.1 professional man-years. These resources are divided as follows:

(a) Work on the development of agriculture in the United States, which currently involves 2.1 professional man-years.

(b) Work on the history of USDA programs and organization, which currently involves 3.0 professional man-years.

PROGRAM OF STATE EXPERIMENT STATIONS

No work in agricultural history was reported by the State Experiment Stations.

PROGRESS--USDA AND COOPERATIVE PROGRAMS

A. Development of agriculture in the United States

As the only office in the Federal Government conducting historical research on the development of American agriculture, the staff carries out numerous analyses of particular problems for the Administrator, the Office of the Secretary, other Government agencies, and research workers in the land-grant colleges and elsewhere. In some cases the analyses are published, but many are not.

The idea of two technological revolutions in agriculture related to the Civil War and World War II has won considerable acceptance. A limited amount of research is being devoted to the problem of quantitative measurements of such revolutions. During the past year, a statistical analysis of the concept was published in Agricultural Economics Research.

Some work is being undertaken in the preparation of a comprehensive analytic index or guide to source material on American agricultural history. The first work was concentrated on sources for the history of fruits and vegetables, a subject upon which many inquiries are received every year, and a preliminary index has been prepared. Work is now being done on agricultural technology.

Basic research on the history of farm organizations continued during the year. Information on this topic was supplied to the Office of the Secretary and to scholars in land-grant institutions.

B. History of USDA programs and organization

Work on historical studies of agricultural policies and programs was emphasized during the past year and will continue to receive emphasis. A number of staff studies have been prepared upon assignment from the Office of the Administrator and the Office of the Secretary. These have included such topics as the history of the organization of scientific research in the Department, the role of the USDA in the American economy, the development of the farmer committee system, and the work of the Department with respect to farm debt during the depression. Considerable time was devoted to service work in answering requests for historical information from Department and other Government officials and the public.

The continued emphasis on defense planning and the reorganization of some of this work led to many requests for material on World War II and the Korean War. In addition, the chronology of USDA defense planning activities was brought up to date at the request of the staff in the Secretary's Office.

Research completed on the history of price support and adjustment programs was important in preparing several of the staff studies needed by the Office of the Secretary. The origins of particular ideas proposed for supporting farm prices has been investigated in recent months.

At the request of and in cooperation with the foreign divisions of the Economic Research Service and the Foreign Agricultural Service, work is under way on a comprehensive history of U. S. technical assistance programs in agriculture. This study will continue as a major project during the coming year.

At the request of the Department's Office of Personnel, a history of personnel management in the Department has been undertaken. The project is significant outside the Department in that USDA personnel programs have influenced many other government agencies. Research carried on in connection with this project has already proven useful to the Office of Personnel in reaching certain policy decisions.

PUBLICATIONS--USDA AND COOPERATIVE PROGRAMS

Rasmussen, W. D., 1963. Agricultural Tools and Machines, in Harper Encyclopedia of Science. Vol. 1, pp. 16-19.

Rasmussen, W. D., 1964. Valley to Valley, Country to Country, in Yearbook of Agriculture, 1964, pp. 1-11.

Swanson, J. A., 1964. Economic Growth and the Theory of Agricultural Revolution, in Ag. Econ. Research, Vol. 16, pp. 51-56.

AREA NO. 6. FARM POPULATION AND RURAL LIFE

PROBLEM

The continuing rapid increases in the productivity of United States agriculture, along with an expanding urban-industrial economy, have brought about great changes in the farm and rural population, in the farm manpower situation, and in the level of living of farm people. Further changes can be expected in the size, composition, and distribution of the farm population, the farm working force, and the level of living of farm and rural people. These past and prospective trends of a declining farm population have widespread implications on agricultural policy through their effects on the manpower situation, the scale of "family farming" and the relationship between farm and nonfarm levels of living. The collection of basic statistics on population, manpower and levels of living, along with strengthened research and analyses, are of vital importance to a fuller understanding of the impact of agricultural policies and general economic and social conditions on agriculture, as guides to agricultural program reappraisals, and in the implementation of such activities as the Rural Areas Development Program and the newly launched anti-poverty program.

USDA AND COOPERATIVE PROGRAM

The Department has a long-time continuing program of work designed to develop and analyze information on the farm and rural population; on the rural labor force; on levels of living of farm and other rural people; on population, manpower and related aspects of rural development; and on the retirement plans and attitudes toward retirement of farmers.

Studies of all types indicated above are being carried on in the Washington office both independently and in cooperation with other agencies of the Department and other Federal departments, such as the Departments of Commerce, Labor, and Health, Education, and Welfare.

Farm population and related studies are being carried on in cooperation (or by contract) with Experiment Stations in Iowa, Colorado, Delaware, and Oklahoma. The Department provides technical and consultant service to regional population projects involving 12 Northeastern States, 13 North Central States, and 16 Southern States. Work is also done cooperatively or through contract with the Statistical Reporting Service and with the Bureau of the Census.

Manpower studies are done by the Washington staff through contract for gathering of basic data with the Bureau of the Census, and through analyses of other data published by the Departments of Agriculture and Labor and the Census Bureau. In addition, other studies on rural manpower problems are carried on in cooperation with State Experiment Stations in Iowa and Ohio.

Studies relating to various aspects of levels of living, health, and education of farm and rural people have been completed or are being carried on in cooperation with Experiment Stations in Kentucky and Florida. Also, data from the Bureau of the Census and other sources have been utilized for analyzing differences in levels of living of rural and urban people. Plans have been made for preparation of a monograph relating to the rural aged population with chapters authored by recognized authorities in the field of aging.

Many of the above projects provide data of particular relevance to rural development and the anti-poverty programs. In addition, studies on rural development aspects of population, manpower or level of living have been completed or are being carried on cooperatively with the Experiment Stations in Ohio, Iowa, Texas, Louisiana, Michigan and Colorado.

The Federal effort devoted to research in this area currently totals 11.0 man-years per year with 3.6 being devoted to Farm Population, 2.7 to Manpower, 1.0 to Rural Aging and Retirement, 2.0 to Levels of Living, and 1.7 to Rural Development.

Five line projects were completed. New studies have been initiated in this area of work under continuing line projects.

PROGRAM OF STATE EXPERIMENT STATIONS

Thirty-nine states are engaged in basic and applied research in this area. At a number of the stations, the research is conducted cooperatively with the Department. Rural sociologists at the State stations are increasingly providing useful fundamental and practical knowledge regarding human resource and community development.

The studies cover such subjects as population change, migration, and population estimates, rural and community organization and leadership and development, social economics of agriculture and rural life, family life and youth development, communication and diffusion of information and adoption of improved practices, levels and standards of living including education, health, welfare and social security, and goals, values and decision-making. The station and regional researches are unique to the problem needs of the individual states and to the regions.

Some of the studies are concerned with developing a fundamental understanding of the present and potential employment of rural residents in relationship to their skills, family labor inputs, family income, perceptions of alternative opportunities and motivations. Community development programs are being analyzed to determine their effectiveness in improving the well-being of the rural populations they serve. Analyses are being made of selected social, psychological, and economic factors on the effectiveness of communication processes and media in the adoption process. The role of goals, values and decision-making in various personal, family, educational,

economic and organizational factors is being studied. A limited number of studies are concerned with the social or non-economic factors influential in production, marketing, and consumption.

The total State scientific effort devoted to Farm Population and Rural Life research is 93.4 professional man-years.

REPORT OF PROGRESS FOR USDA AND COOPERATIVE PROGRAMS

A. Farm Population Changes, Trends, and Migration Patterns

1. Population Changes and Trends. The farm population numbered about 13.4 million in 1963 (April-centered annual average), a decline of .9 million from the previous year. An estimated 1.4 million people left farms during the 1963 reporting year, but .5 million of this loss was offset by movement to farms and by the excess of births over deaths in the farm population. Indications are that the decline in farm population continued in 1964 but at a lower rate.

The labor force living on farms numbered 5.5 million in 1963, of which 35 percent was employed in nonagricultural work. Just as the practice of farm residents engaging in nonagricultural work has increased, so too has the practice increased of persons working in agriculture but not living on a farm. Between 1960 and 1963 the proportion of persons in agricultural employment who did not live on farms rose from 25.4 percent to 31.8 percent.

A study was prepared and published in a demographic journal on the subject of numerical changes in the U. S. rural population, dealing especially with areas of declining population and with the condition of natural decrease (excess of deaths over births) that has begun to appear in areas where heavy prolonged outmigration has greatly distorted the age structure of the population.

Work continued on a cooperative project with Oklahoma State University dealing with population changes in small towns of the South.

A draft was prepared of a bulletin on measures of potential replacement of the male rural population of labor force age by younger men, some findings from which were reported last year. Additional computations were made to extend these measures to the Spanish-American population of the Southwestern States, and to groupings of counties eligible for government assistance under the Area Redevelopment Act.

To meet the recurring demand for farm population data by economic class of farm, use was made of the Department's annual Enumerative Survey on a 48 State basis. The tabulations show by economic class of farm the distribution of farm operators by age, color, region, amount of nonfarm income received, population in the operators' households and population living in other households on the farms. Preparation of a report is underway.

The Department continued to supply technical and consulting service to regional projects concerned with population analyses.

In the course of the reporting year, substantial amounts of time were required for service work in the area of population statistics and analysis. The volume of requests for information received by the Farm Population Studies Section has increased very substantially over the past 10 years. The decline in the size of the farm population and in the relative importance of the total rural population has been accompanied by a considerable increase in the demand for data on these populations. Among the service requests handled were the preparation of materials on the rural population for the Manpower Report of the President and the provision of data and consulting services to the Commission on Civil Rights relating to the Negro farm population.

2. Migration. The large project devoted to the computation and analyses of migration estimates and rates for counties and other areas of the United States, cooperative with the Oklahoma State University, is now in the final stages for submission to the Government Printing Office. During the year a grant was received from the Area Redevelopment Administration to assist in paying the costs of publication. An article based on these migration data is being sent to a professional journal for publication.

In last year's report, findings were announced from two surveys dealing with the adjustment of rural migrants in Des Moines, Iowa, and Wilmington, Delaware. The two major reports from these surveys have been approved for publication. A short popular version of the Des Moines findings has also been approved and a second report from the Wilmington study is underway, based on additional tabulations.

Unpublished tabulations were purchased from the Bureau of the Census showing the movement of population to and from each of 509 State economic areas to each other area for the period 1955 to 1960. These statistics are from the 1960 Census of Population and provide a picture of population flows in the United States not previously available. Various administrative uses have been made of the data, especially in connection with the Manpower Report of the President and other needs associated with manpower training programs. A cooperative agreement has been negotiated with Oklahoma State University for analysis of the data and eventual publication of the results.

A bibliography was issued that lists and annotates all studies on the migration of farm population in the United States published from 1946 to 1960.

Two additional studies on migration were completed. One was a follow-up study of migrants from Sedgwick County, Colorado, published as a bulletin of the Colorado Agricultural Experiment Station. The other was a report on the number and characteristics of people moving into and out of a statewide sample of rural land segments in Iowa from 1950 to 1960. A popular summary was issued and the full report is in clearance.

B. Farm and Rural Manpower Analyses

1. Agricultural Manpower, Employment, and Wages. The annual survey of the hired farm working force showed that about 3.6 million persons did farm wage work at some time during 1963. Analysis of the detailed information from the survey has been completed. Special emphasis has been given to comparison of the characteristics, employment, and wages of persons who did farm wage work only with those who did both farm and nonfarm wage work. The latter group numbered about 1.1 million in 1963. These workers were more fully employed and differed significantly from those workers who did farm wage work only. Workers with both types of wage work are more likely to be found among whites, males, nonfarm residents, and young adult workers, and in the Northeast and Western regions. The 1963 survey indicates a drop in earnings from farm wage work from the two previous years. Associated factors are declining hours of work per day and a small drop in average days of farm wage employment in the year.

Data were obtained in the 1963 survey for a study of the kinds and value of perquisites farm workers received in addition to their cash wages. Forty-two percent of the workers who did 25 days or more of farm wage work and worked 7 days or more on their longest job received either housing, room and board, or meals while employed on their longest job. Housing, and associated perquisites, such as garden space, wood or other fuel, and food products from the farm, were the most common types of "fringe benefits" received by workers. Special data on the households of hired farm workers indicated that about 56 percent of the households from which farm wage workers are recruited had family incomes of less than \$3,000. They are, thus, predominantly in that sector of the population defined as living under poverty conditions. Fully one-half of the population in these households were children under 18 years of age. Reports for publication are in process.

Service work included activity in connection with various committees, including Subcommittees of the President's Committee on Manpower, and guidance and assistance to the office of the Secretary, in cooperation with staffs of other agencies, in the preparation of various materials dealing with farm labor. Many man-months were devoted to the preparation of a report on the hired farm labor situation in the United States for the use of the Secretary. Among the service requests handled were the preparation and review of materials for the Manpower Report of the President and the servicing of numerous requests for information on migratory farm workers and related matters. The service work also involved the handling of position reports on congressional legislation and on agenda items of the International Labour Office in Geneva.

2. Manpower Adjustments Associated with Suburbanization. The project relating to impact of suburbanization on rural people in the urban fringe of two counties in Maryland adjacent to the Washington, D. C. metropolitan area was completed. The major findings were reported previously.

3. Occupational Mobility. A special analysis of data on the intergenerational mobility of farm wage workers is underway. The study, based on results from a national survey conducted in March 1962, showed that about half (56 percent) of the workers in the sample came from families where the fathers were employed in farm occupations at the time the workers were 16 years old. Half of all the workers were living in the same communities in 1962 they were in when they were 16 years old. Those who had moved to urban areas had higher levels of educational attainment than those who moved to rural areas.

C. Rural Aging and Retirement

1. Planning for Older Age. The project on planning for older age in rural Kentucky, initiated last year, was discontinued and not conducted.

A cooperative agreement between ERS and the Kentucky Agricultural Experiment Station has been negotiated which provides for the preparation of a monograph on the rural aged. Plans call for preparation of chapters on the demographic, social, and economic conditions of the rural aged by experts in the field; and for publication of the monograph as a hard cover book by the University of Kentucky Press.

2. Retirement Plans. A report on the retirement plans and adjustments to retirement of farmers in South Dakota has been approved for publication. A paper based on the study was read to the Rural Sociological Society in 1963. The project has been completed. Some of the findings from the study were reported previously. Additional highlights are: eighty-five percent of the farmers sampled in Brookings, Miner, and Minnehaha Counties in eastern South Dakota indicated that they expected to retire at some future date, but only 3 in 10 had made definite plans for this retirement. Residence in a small town was the first choice for retirement location for most of those who indicated they would retire. The average age preferred for retirement was 62 years. More farmers anticipated social security benefits as a source of income after age 65 than anticipated income from either farm operation or rental.

D. Population, Manpower, and Related Aspects of Rural Development

1. Rural Industrialization. Projects are designed to appraise the impact of new industries on predominantly rural communities and to point up implications of rural industrialization for programs of rural development. Major emphasis has been given to the analysis of an area in Ohio surveyed in 1957 and resurveyed in 1962. The study provides comparison of changes in a wholly rural county in which a large industrial plant was established with conditions in a similar county which has not felt the impact of industrialization. The report showing the impact of industrial employment on the hitherto rural economy is in preparation.

2. Human Resource Development. In cooperation with Colorado State University a project was developed on social and economic adjustments to population

and manpower loss and redistribution in rural areas of Colorado. Field survey work was recently completed in two counties of substantial population loss and low incomes and one of moderate population increase and more adequate incomes. The principal objectives are to determine the impact of population loss on the character and function of selected social and economic institutions, changes in service and trading area boundaries, the attitudes and plans of people relating to vocational and other education and on occupational changes and migration. It is expected that the study will provide guidelines to appropriate development programs for these and similar areas.

3. Adjustment of Special Groups. Studies were conducted in Texas and Michigan to determine trends in the availability of Spanish-Americans for agricultural work, along with related labor force data and demographic characteristics of this group. Two papers based on data from the Texas study were presented to professional society meetings; a manuscript on another phase of the Texas study is undergoing review. Work proceeded on the final analysis for both studies; manuscripts on each are in process.

Although agricultural work was important as the first full-time employment of the household heads interviewed in Texas, they tended to move into non-agricultural occupations later in life, particularly if they resided in urban places. However, these new occupations were generally of relatively low status, such as laborers, craftsmen, or service workers. Few household heads indicated they would be interested in agricultural work again. Relatively few encouraged their children to live or work on farms. Most felt conditions had improved for Spanish-Americans and would continue to improve in the next decade. In general, they saw education for their children as a key to advancement.

In the Michigan study differences among Spanish Americans permanently domiciled in the State and those who are migrant sugar beet workers (mainly from Texas) were examined. Most of those now resident in Michigan had moved from the Southwest in search of better economic opportunities; they felt that economic and social conditions had improved for Spanish Americans in Michigan in the last ten years. Almost all who had been migrant farm workers before taking up permanent residence in Michigan had gone into nonagricultural occupations. Their family incomes on the average were at least twice those of migrant sugar beet workers.

E. Rural Level of Living Studies

1. Level of Living Measures. Census data were used to compare the socioeconomic status (SES) of the white and nonwhite farm population of 14 southern states in 1950 and 1960. Although each of the measures of socioeconomic status -- farm operator level-of-living indexes, income, educational attainment, and housing -- showed that the SES of both the white and nonwhite farm population increased between 1950 and 1960, the gains were greater for the white populations and socioeconomic differences between whites and nonwhites had not narrowed over the decade.

Data were selected from the 1960 Census of Population and Housing to compare the social and economic characteristics of the urban and rural populations in each State. Information on demographic, economic, educational, and housing characteristics was published by State and residence. Compared with the nonfarm population, the farm population was characterized by larger families, lower earnings, higher school dropout rates for 19 year olds, and a higher proportion of deteriorating or dilapidated housing units.

2. Education

A report summarizing results of a study of the educational and occupational plans of 171 Negro and 240 white 12th graders in a low-income rural area of Northern Florida is in press for publication by the Florida Agricultural Experiment Station. About half the youth expected to continue their education after leaving high school. Occupational aspirations of the youths exceeded their expectations, as twice as many would like to be professional workers as actually expected to enter this type of profession. The youths ranked their teachers first in influencing their educational goals but reported that their mothers had the greatest influence on plans for their life work.

A report on the socioeconomic factors associated with the educational attainment of farm and nonfarm youths in 1960 is in review. Results show that dropout rates for 16-19 year olds were lowest in urban areas and highest in rural-nonfarm areas, but that urban-rural differences in estimated dropout rates for 16 and 17 year olds largely disappeared when parental income, education, and occupation were considered. Youths with high dropout rates were more frequently in families where parental education was low, where income and education of father was low, and where father was employed in a laborer or blue-collar occupation. There was a high positive correlation between the proportion of dropouts 16-19 years old and the proportions 2 years younger who were enrolled in grades below those normal for their age, suggesting that dropping out of school is closely related to failure to maintain normal scholastic progress.

The project on the analysis of the extent and character of participation of farm youth in higher education has been completed. Research findings under this project have been included in previous annual reports.

3. Health

The bulletin Hospitals for Rural People was revised in 1963. Health services for rural people greatly improved through the Federal Aid provided by Title VI of the Public Health Service Act of 1946 -- often referred to as the Hill-Burton program. Standards for construction under this program have helped to raise the standards of other health facilities in the area. Federal Aid on approved projects varies from one-third to two-thirds of the

cost of construction. By June 30, 1963, 6,810 projects had received financial help or had been approved for assistance under the Act. These projects include hospitals, public health centers, diagnostic and treatment centers, nursing homes, facilities for patients with chronic illness and rehabilitation centers. More than half of the general hospitals assisted with Federal funds were built in communities of less than 5,000 population.

PUBLICATIONS REPORTING RESULTS OF USDA AND COOPERATIVE RESEARCH

Farm Population Changes, Trends, and Migration Patterns

- Andrews, Wade H., and Sardo, Joseph. 1964. Migration and migrants from Sedgwick County, Colorado. Tech. Bul. 82, 34 pp.
- Banks, Vera J., Beale, Calvin L., and Bowles, Gladys K. Oct. 1963. Farm population . . . Estimates for 1910-62. ERS-130, 49 pp.
- Bauder, Ward W. Oct. 1963. The impact of population change on rural community life: The economic system. Iowa State Univ. of Science and Tech., Dept. of Econ. and Sociol. A and HEES Project Nos. 1225 and 1497, 52 pp.
- Beale, Calvin L. 1964. Rural depopulation in the United States: Some demographic consequences of agricultural adjustments. Demography, Vol. 1, No. 1, pp. 264-272.
- Economic Research Service. July 1964. Farm Population . . . Estimates for 1963. ERS-177, 4 pp.
- Skrabanek, R. L., Banks, Vera J., and Bowles, Gladys K. Jan. 1964. Farmer adjustments to drouth in a Texas county. Texas Agr. Exp. Sta. B 1005, 28 pp.
- U. S. Dept. Commerce, Bur. of the Census, and U. S. Dept. Agr., Economic Research Service. May 1964. Estimates of the farm population of the United States April 1963. Farm Population. Series Census-ERS-P-27, No. 34, 7 pp.

Farm and Rural Manpower Analysis

- Kaldor, Donald R., Bauder, Ward W., and Trautwein, Marvin W. Apr. 1964. Impact of new industry on an Iowa rural community - Part 1. Farming and farm living. Iowa Agr. Exp. Sta. Special Report No. 37, 32 pp.
- U. S. Dept. Agr., Economic Research Service. Oct. 1963. Advance report of the hired farm working force of 1962. ERS-141, 7 pp.

Rural Aging and Retirement Studies

- Bauder, Ward W., Biggar, Jeanne C., and Sauer, Howard M. 1964. Retirement plans, concepts, and attitudes of farm operators in three eastern South Dakota counties. S. Dak. Agr. Exp. Sta. (in press).

- Youmans, E. Grant. 1964. Personal adjustments of older rural and urban persons. In Social Change and Aging in the Twentieth Century. Univ. of Fla. Institute of Gerontology. pp. 78-85.
- Youmans, E. Grant. 1963. Social psychological characteristics of old age. In Human Aging: A Biological and Behavioral Study. pp. 259-279.

Rural Level of Living Analyses

- Cowhig, James D., and Beale, Calvin L. Mar. 1964. Socioeconomic differences between white and nonwhite farm populations in the South. Social Forces, Vol. 42, pp. 354-362.
- Cowhig, James D., and Beale, Calvin L. Sept. 1964. Relative socioeconomic status of southern whites and nonwhites, 1950 and 1960. Southwestern Social Science Quarterly, Vol. 45, pp. 113-124.
- Economic Research Service. Mar. 1964. A summary of selected characteristics of the urban and rural populations, by State, 1960. ERS-174, 18 pp.
- Hay, Donald G., McKain, Walter C., Jr., and Tobin, Betty. Sept. 1963. Health care practices in the Windham Community Hospital area. Storrs Agr. Exp. Sta. Bul. 381, 18 pp.
- Manny, Elsie S., and Rogers, Charles E. Dec. 1963. Hospitals for rural people. Farmers' Bul. 2110, (Revised), 20 pp.
- Youmans, E. Grant, Grigsby, Shaw E., and King, Helen Carawan. 1964. After high school -- what? A study of career plans of Negro and white youth in the rural South. Florida Agr. Exp. Sta. (in press).

Line Project Check List -- Reporting Year October 1, 1963 to September 30, 1964

| Work & Line Project Number | Work and Line Project Titles | Work Locations During Past Year | Line Proj. Incl. in | |
|-------------------------------------|------------------------------------------------------------------------|-------------------------------------|---------------------------|------------------------------|
| | | | Summary of Progress | Area & Sub- Subheading |
| ESA 1 | Current Outlook and Situation Analysis for Agricultural Commodities | Washington, D.C. | | |
| ESA 1-1 | Livestock and meat | Washington, D.C. & Denver, Colo. | Yes | 1-A |
| ESA 1-2 | Fats, oils and oilseeds | Washington, D.C. | Yes | 1-B |
| ESA 1-3 | Milk and manufactured dairy products | Washington, D.C. | Yes | 1-C |
| ESA 1-4 | Poultry and eggs | Washington, D.C. | Yes | 1-D |
| ESA 1-5 | Food Grains | Washington, D.C. | Yes | 1-E-1,2 |
| ESA 1-6 | Feed grains and other feeds | Washington, D.C. | Yes | 1-F |
| ESA 1-7 | Fruits and tree nuts | Washington, D.C. | Yes | 1-G |
| ESA 1-8 | Vegetables | Washington, D.C. | Yes | 1-H-1,2 |
| ESA 1-9 | Sugar and allied sweeteners* | Washington, D.C. | No | |
| ESA 1-10 | Cotton and synthetic fibers | Washington, D.C. | Yes | 1-I |
| ESA 1-11 | Animal fibers | Washington, D.C. | Yes | 1-J |
| ESA 1-12 | Tobacco and tobacco products | Washington, D.C. | Yes | 1-K |
| ESA 2 | Price, Supply, and Utilization Analysis for Farm Products | Washington, D.C. | | |
| ESA 2-1 | Development, consultation and service work | Washington, D.C. | Yes | 2-F |
| ESA 2-3 | Effects of technological changes on tobacco | Washington, D.C. | Yes | 2-E |
| ESA 2-5 | Price, demand and utilization of fruits* | Washington, D.C. | No | |
| ESA 2-6 | Consumption of textile fibers | Washington, D.C. | Yes | 2-C |
| ESA 2-7 | Price and utilization of cotton | Washington, D.C. | Yes | 2-C |
| ESA 2-8 | Price and supply of beef cattle | Washington, D.C. | Yes | 2-A |
| ESA 2-9 | Price and consumption of meat | Washington, D.C. | Yes | 2-A |
| ESA 2-10 | Price, supply and utilization of vegetables | Washington, D.C. | Yes | 2-D |
| ESA 2-11 | Price, supply and consumption of poultry* | Washington, D.C. | No | |
| ESA 2-12 | Factors that affect the feed-livestock economy | Washington, D.C. | Yes | 2-A,B |
| ESA 2-13 | Supply, price and utilization of tobacco | Washington, D.C. | Yes | 2-E |

* No work done during reporting period.

Line Project Check List -- Reporting Period October 1, 1963 to September 30, 1964 (Cont'd)

| Work & Line Project Number | Work and Line Project Titles | Work Locations During Past Year | Line Project Incl. in | |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------|---------------------------|
| | | | Summary of Progress (Yes-No) | Area and Subheading |
| ESA 3 | Measurement and analysis of farm income and expenditures | Washington, D.C. | | |
| ESA 3-1 | Current estimates of cash receipts, gross and net farm income, and related series | Washington, D.C. | Yes | 3-A |
| ESA 4 | Research and methods relating to farm income estimates | Washington, D.C. | | |
| ESA 4-1 | Research and methods relating to farm income estimates | Washington, D.C. | Yes | 3-B-1,2,3 |
| ESA 4-2 | Quantitative relationships between agriculture and other sectors of the economy | Washington, D.C. | Yes | 3-C-1,2,3 |
| ESA 5 | Statistical data services | Washington, D.C. | | |
| ESA 5-1 | Statistical services which includes the centralization, maintenance, and analysis of basic economic data relating to agriculture | Washington, D.C. | Yes | 3-D |
| ESA 6 | Income and demand analysis as applied to agriculture and the agricultural outlook | Washington, D.C. | Yes | 4-A |
| ESA 7 | Long-run agricultural projections, analysis and research | Washington, D.C. | Yes | 4-B |
| ESA 8 | Measurement and analysis of supplies and consumption of food and other agricultural products | Washington, D.C. | Yes | 4-C |
| ESA 8-1 | Outlook analysis and current estimation of supplies and consumption of food and other products originating in agriculture | Washington, D.C. | Yes | 4-C |
| ESA 8-2 | Development and use of master index of supply-utilization of farm commodities | Washington, D.C. | Yes | 4-C |
| ESA 8-3 | Analysis of effects of changes in the structure of the U.S. economy on the demand for food | Washington, D.C. | Yes | 4-C |
| ESA 8-4 | Measurement and economic analysis of wastes and losses of food in marketing | Washington, D.C. | Yes | --- |
| ESA 9 | Agricultural history | Washington, D.C. | | |
| ESA 9-1 | Service work on the history of agriculture | Washington, D.C. | Yes | 5-A |
| ESA 9-2 | Documentation of Department policies, organization, and administration | Washington, D.C. | Yes | 5-B |
| ESA 9-3 | History of production and adjustment plans and programs | Washington, D.C. | Yes | 5-B |

Line Project Check List -- Reporting Period October 1, 1963 to September 30, 1964 (Cont'd)

| Work & Line Project Number | Work and Line Project Titles | Work Locations During Past Year | Line Proj. Incl.in | |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------|---------------------------|
| | | | Summary of Progress (Yes-No) | Area & Sub- heading |
| ESA 10 | Farm Population Studies | Washington, D.C. | | |
| ESA 10-1 | Estimates and analyses of size, composition and changes in current and future farm population, and service work in population statistics. | Washington, D.C. | Yes | 6-A-1 |
| ESA 10-2 | Current estimates and analyses of migration of the farm and rural population. | Oklahoma | | |
| ESA 10-3 | Population, agricultural, and economic factors relating to migration in the North Central Region. | Washington, D.C. | Yes | 6-A-2 |
| ESA 10-4 | The effects of urban-industrial expansion on Northeastern agriculture. | North Central States | Yes | 6-A-1 |
| ESA 10-6 * | The impact of population change and migration on rural life in a Great Plains County (Sedgwick, Colorado). | Northeastern States | Yes | 6-A-1 |
| ESA 10-7 | Characteristics of the French and Non-French rural populations in Louisiana, with special reference to factors relevant to rural development. | Colorado | Yes | 6-A-2 |
| ESA 10-8 * | Adjustment of rural migrant families in metropolitan areas (Iowa). | Louisiana | | |
| ESA 10-9 | Adjustment of rural migrants in Wilmington, Delaware. | Washington, D.C. | No | |
| ESA 10-10 * | Migration of farm people in Iowa during the 1950-60 decade. | Iowa | Yes | 6-A-2 |
| ESA 10-11 | Analysis of population changes in Southern towns and cities, with special reference to changes in farm trade and service centers. | Delaware | Yes | 6-A-2 |
| ESA 10-12 | Analysis of potential replacement of population of working age, 1960-70 decade, rural and urban areas of the United States. | Iowa | Yes | 6-A-2 |
| ESA 10-13 | Human resource development in rural communities in Rocky Mountain States. | Oklahoma | | |
| ESA 11 | Farm Manpower Analysis | Washington, D.C. | Yes | 6-A-1 |
| ESA 11-1 | Analyses and service work in agricultural manpower, employment, and wages. | Washington, D.C. | Yes | 6-B-1 |
| ESA 11-2 * | Analysis of the extent and character of participation of farm youth in higher education. | Washington, D.C. | Yes | 6-E-2 |
| ESA 11-3 * | Rural population and manpower adjustments associated with rapid suburbanization in rural areas. | Washington, D.C. | Yes | 6-B-2 |
| ESA 11-4 | A study of Spanish-American workers in Texas and their changing role in agriculture. | Texas | | |
| ESA 11-5 | A study of Spanish-American workers in Michigan and their changing role in agriculture. | Washington, D.C. | Yes | 6-D-3 |
| ESA 11-6 * | Concepts of retirement, attitudes toward retirement, and retirement plans of farmers. | Michigan | Yes | 6-D-3 |
| ESA 11-7 | Effects of industrialization on rural areas in Southeastern Ohio. | Washington, D.C. | Yes | 6-D-3 |
| ESA 12 | Rural Levels of Living Studies | South Dakota | Yes | 6-C-2 |
| ESA 12-1 | Development and maintenance of level-of-living indexes of farm families. | Colorado | | |
| ESA 12-4 * | Factors in educational plans and career aspirations of 12th grade students in selected low-income rural counties of Florida. | Iowa | Yes | 6-D-1 |
| ESA 12-5 * | Planning for older age in rural Kentucky. | Washington, D.C. | Yes | 6-E-1,3 |
| | | Florida | Yes | 6-E-2 |
| | | Kentucky | Yes | 6-C-1 |

* Discontinued.

